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LIFE OF LINNÆUS.

Price Three Shillings and Sixpence.

THE

LIFE OF LINNÆUS,

THE CELEBRATED

SWEDISH NATURALIST.

TO WHICH IS ADDED,
A SHORT ACCOUNT OF THE BOTANICAL SYSTEMS OF
LINNÆUS AND JUSSIEU,
WITH A
SLIGHT GLANCE AT THE DISCOVERIES OF GOËTHE,
THE GREAT GERMAN POET.

COMPILED FROM AUTHENTIC SOURCES
BY D. C. CARR,
MASTER OF THE CLASSICAL SCHOOL, FAKENHAM, AND LECTURER
ON BOTANY, PHYSIOLOGY, ETC.

> ——— Quid virtus et quid sapientia possit
> Utile proposuit nobis exemplar.
> HOR.

HOLT:
PRINTED BY JAMES SHALDERS.
1837.

434.

BIBLIOTHECA · BODLEIANA ·
DOMINUS ILLUMINATIO MEA

TO MY ELDEST SON.

My Dear Boy,

I know no one more worthy of the respect which the dedication of a book implies than yourself. Although now only eleven years old, you have already been a source of pure delight and satisfaction to me, and your affectionate mother. Well do I remember the time, when your vain attempts to articulate the simplest words of your native tongue, used to excite our mirth by their failure. From that time to the present, I have ever found you most obedient, teachable, and eager to profit by instruction. I say not this with a view to render you vain in your own eyes—for I trust you will always well reflect, that " every good gift, and every perfect gift is from above, and cometh down from the Father of lights" —but I mention it to encourage you in your future progress. Persevere, my child, in the path of knowledge and virtue; and if it please God to prolong your life to man's estate, let it be your main object to render yourself serviceable to your fellow-creatures, and thus profitably employ the talent committed to your care.

You are aware, that it is my intention almost immediately to instruct you in the delightful science of botany. I have waited only until you should be sufficiently acquainted with the Latin and Greek languages, to enable you to pursue it with accuracy, and an enlightened perception of its principles; for although such a preparatory knowledge is not absolutely necessary to form a botanist, it is attended with many decided advantages. To explain to your youthful mind every particular on this head would be needless—I shall merely observe, that most of the terms used in this, as well as in every other science, are derived from those languages; and that to every plant, in the classification of LINNÆUS, are allotted two names, which it requires a knowledge of syntactical construction to express correctly.

This first step you have happily accomplished, and may now enter upon the study with a probability of success. I promise myself much happiness in guiding your early progress, but, if I divine aright, you will soon be enabled to pursue your inquiries without my assistance; for so fascinating and easy is this science, after the elementary principles have been properly explained, and so connected are its various parts, that an intelligent and discriminating pupil will find much of his labour anticipated, by the acquisition of some previous fact.

Let the example of the great LINNÆUS stimulate you to perseverance. The first thought which occurred to me of dedicating this little book to you, was suggested, by an admiration of that great man's *juvenile* powers of observation, and the habit of method which characterized every period of his life. Imitate him in all the virtues he possessed, and shun his failings. If with such a spirit you devote yourself to this beautiful study, I feel an assured conviction that it will have the effect on your mind which I earnestly desire—namely, a veneration of the wisdom and benevolence of the Creator, and a fixed resolution to obey his commands. I am,

MY DEAR BOY,

Your most affectionate Father,

DANIEL C. CARR.

Fakenham,
January, 1837.

PREFACE.

THERE are many intelligent persons, who are dissatisfied with the accounts of LINNÆUS generally given in magazines and biographical dictionaries. They truly observe, that the dangers and difficulties he encountered as a naturalist, and the improvements he introduced into science, cannot be fully stated in such meagre details, and consequently that a just estimate of his character cannot from thence be formed. On the other hand, they find it inconvenient to spare from their daily avocations the time which is necessary for the perusal of voluminous works, which contain lengthened digressions and learned speculations. To all such, the present little publication is offered as a convenient alternative. It has been drawn up with great care from a variety of sources, and will, it is hoped, be found to contain every important particular, in the career of this great man, that can interest the lover of natural science, as well as every amusing anecdote that can gratify the more general reader.

Another reason which has contributed to the publication of this memoir is the following:—the compiler, when delivering his Course of Botanical

Lectures, would deem his plan imperfect, were he not to introduce to the notice of his auditory the principal events of the life of LINNÆUS, as being the great master whose system he professes to advocate; but the variety of interesting subjects, which the vegetable kingdom presents for discussion, allows him a space of time but ill proportioned to the deserts of so extraordinary a genius: he therefore finds it necessary, in justice both to his hearers and the illustrious Swede, to refer them to some more extended narrative which can supply the desired information. Conceiving the accounts already published to be either deficient in facts, or too voluminous, as before stated, he has undertaken to supply what he thought a desideratum.

It may not be unprofitable to say a few words about the pleasures and utility of systematic Botany. There are hundreds of individuals extremely attached to flowers and gardening, who are totally ignorant of the principles of classification. They are acquainted, it is true, with the *names* of all the plants they cultivate, and thence derive some share of gratification; but their pleasure would be increased tenfold, if, instead of remaining satisfied with the confused notions which float in their minds, they would learn to assign to each production its proper station in the beautiful arrangement of science. Such persons neglect this part of the study from an impression of its difficulty. They *fancy* it is too learned for their powers of understanding to surmount, and therefore never make the trial. This is an error which cannot be too soon removed; for it is a certain fact, that, by a few weeks of common application, they would be able to master the general principles of the Linnæan system—the terms, though apparently abstruse, would be understood by degrees—and they would thus be introduced, by the magic wand of science, into a new field of delighted existence, where numberless charms, which before lay concealed behind an impenetrable veil, would meet their astonished view at every step of their progress. A third object, therefore, contemplated in the compilation of this Memoir is, to persuade individuals of the above description no longer to deprive themselves of the superior advantages which a knowledge of systematical botany will confer. After perusing the fact, that the penetrating skill of LINNÆUS has invented a method so simple, that it has gained acceptance in every civilized country from the facilities it offers, they will hardly be deterred from giving such a system a fair examination.

The general establishment of horticultural exhibitions throughout the kingdom, renders this knowledge, at the present time, more particularly necessary, as it will enable those who possess it to reap all the advantages which such excellent institutions are calculated to impart, and which those who go merely to gratify the eye can by no means experience; for the latter must necessarily view all the productions as one confused whole, without a reference to the distinct character, structure, and uses of each. There is as great a difference between the mere florist and the scientific botanist, as there is between one who looks at the heavens without a knowledge of the stars, and the skilful astronomer, who is acquainted with the revolutions and phenomena of all the celestial bodies.

But this is by no means the most important view to take of the advantages resulting from such knowledge:—there is another consideration far more weighty and valuable—its tendency to produce a devotional spirit. For the more intimately we become acquainted with the curious forms, properties, and qualities of even the commonest herbs and plants, the more our admiration rises at the illimitable wisdom which formed them all; and it may safely be asserted, that those who have studied the structure and habits of the vegetable world, by means of some systematic arrangement, are the most likely to attain this solid gratification. Every day and every hour will furnish them with opportunities of scrutinizing more closely the beauty and harmony of the Creator's works, and while they thus scrutinize it is impossible not to adore. To persons of this description the world "becomes a temple, and life one continued act of adoration." Well might the excellent COWPER, whose soul was all alive to those devout feelings, exclaim—

"Go, mark the matchless working of the Power,
That shuts within the seed the future flower;
Bids these in elegance of form excel,
In colour these, and those delight the smell;
Sends nature forth, the daughter of the skies,
To dance on earth, and charm all human eyes."

To the mind, indeed, that is tinctured with scepticism—that doubts of a superintending power—an intimate acquaintance with vegetable, as with animal organization, offers a sovereign remedy. The countless wonders which the microscope has brought to light in the construction of vessels, tubes, and cells, with fluids and juices peculiar to each, must strike conviction to every reasoning mind, that they are the result of all-wise contrivance and design. Instances are on record of some, who were convinced of the existence of a Deity by the anatomy of the human frame—they would equally have been astonished at the mechanism of vegetable life.

" An undevout astronomer is mad," says Dr. Young; and we may add with truth, so is an undevout anatomist or botanist. The *natural* though not the necessary consequence of deep research in any science is, a moral conviction of a creating power; for the question will unceasingly recur—Whence should come all those beautiful contrivances and forms which we behold in the material world, and what is the origin of those myriads of ideas and thoughts which constitute what we term mind? The only rational answer is, that there is one intelligent and universal Cause of all.

From a conviction of the Deity's existence, the transition to a belief in the revelation of his will is easy and unavoidable; for it is impossible to conceive that He, who has created beings like ourselves with powers to reason and to choose, would not follow up the plan by furnishing us with a rule for the guidance of our actions. Although every adaptation which the Creator has designed in the material universe proves, that the happiness of his creatures was the end he had in view, and although not a single instance can be produced in which pain is the *object* of contrivance; yet the very circumstance of being blessed with freedom of action would undoubtedly, in numerous instances, lead men into error—they would pervert the very designs and instruments of divine benevolence to the purposes of misery and of crime. To imagine that an all-wise and good parent would leave his children to grope their way in such mental darkness, to which he had formed their nature liable, is to attribute to him the greatest cruelty, instead of merciful interference, in the direction of their steps. He appears in this light as if making man frail, and then sporting with the misery which that frailty produces. But we may assure ourselves that our condition is not so deserted. God would not create millions of human beings without giving them regulations for their conduct; for in that case he would be an inactive, and consequently an unnecessary, being. Hence the conclusion is necessarily forced upon us, that he has given us a rule for our guidance on earth, and that rule is delivered to us in the Holy Scripture.

The Scriptures abound in pleasing allusions to the vegetable world. The inspired writers of the Old Testament, in conformity with the eastern custom, furnish us with repeated instances; and even the author of all created existences himself, during his abode on earth, borrowed from it many illustrations of his divine precepts. Surely then, after so glorious a sanction, we shall do well to acquire a correct knowledge of this interesting and improving science.

The whole course of LINNÆUS's life presents us with a fine moral lesson; for none, surely, can read the numerous difficulties which he had to contend against, and how triumphantly they were all overcome, without tacitly acknowledging, that perseverance in the path of honour is almost certain of its reward. What individual, who possesses mental attainments, and grounds his resolutions on the solid basis of virtue, may not console himself in the storms of life, when he beholds LINNÆUS in his youth trusting to chance for a meal, and patching up his shoes with paper; and the same man, a few years afterwards, surrounded with comforts, opulent, honoured, ennobled, the favourite of royalty, and almost idolized for his discoveries throughout the civilized world? And it should always be remembered for our encouragement, that the character we are contemplating is not one of remote antiquity, whose lofty virtues seem to exist only in the page of romance, and to excite our astonishment rather than the hope of being able to imitate them; but it is the character of one in our own times, whose death is so recent, that there are doubtless many living who still remember him. Though few possess his penetrating genius, yet his other excellencies—his resolution, his perseverance—are within the scope of our own practice; and his example will inspire us with a heroic determination to meet manfully the obstacles which oppose us. Knowledge, indeed, is power; and never is this truth more apparent, than when that power is acquired and exerted, as in the case of LINNÆUS, under adverse circumstances: it then becomes a resource immensely superior to all others.

Many instances might be brought to prove, that our worldly interests are more frequently advanced by the possession of knowledge, when rightly used, than persons in general are willing to allow ; and often to a far greater extent than the most insatiable avarice could have dared to hope. The most discouraging incidents and formidable difficulties have been converted, by enlightened and persevering minds, into the very means of acquiring those enjoyments, which it is the aim and ultimate wish of all to possess. A grateful heart will not fail to give the honour where alone it is due, and bless the protecting hand of Providence, who, by means concealed from mortal eye, works out for the wise and good, not only a short-lived happiness here, but a boundless scene of intellectual pleasures in a future state of existence.

The few remarks at the end of the book on the comparative merits of the Artificial and Natural Systems, are intended solely, as it is there stated, to excite attention and rouse the curiosity of those commencing the study. The compiler has of course his opinion on their respective advantages: but conscious of his inability to enter on a discussion, in which the most learned are at issue, he withholds any decided observation of his own, and is content merely to point the way where satisfactory information can be found.

The theory which GOETHE has promulgated may be said to constitute the last æra in the history of the science. His opinions are by no means yet to be found generally in English authors, and the only work in this country of any importance that gives an account of them is PROFESSOR LINDLEY'S Introduction to Botany. To that therefore the student must have recourse.

As this little work aspires to no higher character than that of a compilation, the very words of the authors, from whom it is collected, have in many instances been adopted, rather than change their phraseology for the mere sake of novelty. This, it is hoped, will be esteemed a sufficient acknowledgment to the respective writers, for the obligations the compiler is under to each. Should some of them be living, they will not feel offended, that a work of moderate extent and price should endeavour to make more known to the world a man whom they admire, but whose merits their costly and highly-talented writings would not perhaps have an opportunity of publishing, in many instances, where this humble production may make its way.

LIFE OF LINNÆUS.

A FEW men exist in every age, who make so conspicuous a figure in the temple of fame, as to render the minutest circumstances respecting them peculiarly interesting. On the list of these LINNÆUS occupies a prominent station. He formed an æra in a very extensive, pleasing, and useful science; and threw a lustre, not only on his own name and profession, but on his country. A biographical account of so extraordinary a genius cannot, therefore, fail of affording amusement, and of engaging the curiosity of all who are fond of natural history, and particularly that branch of it termed Botany, the study of which has, by his labours, been so simplified, as to be rendered easy to any common capacity. Botany would be indeed a most fatiguing, and almost unattainable science, were we obliged to learn the peculiarities of every plant one by one; but the difficulty ceases, or at least is greatly diminished, by classing those together in which there is a similarity in some one point. Eminent naturalists have at different times exerted their talents to perform the task; and a complete history of Botany, from the earliest ages, would introduce us to a host of illustrious persons, who, by the invention of different systems, have endeavoured to smooth the difficulties of the science. TOURNEFORT, an eminent Frenchman, born in 1656, is a name that was highly distinguished in this number; and our own indefatigable countryman, the celebrated JOHN RAY, who lived nearly thirty years before TOURNEFORT, made Botany his especial study and wrote largely on the science: to him is due the merit of first establishing classes on botanical principles. Many others might be enumerated, of whom the world has reason to be proud: but the superior genius of LINNÆUS has raised him above all his predecessors. His arrangement has been found to be so far more simple, and so much better calculated to enable beginners to ascertain the name of a plant unknown to them, that the systems of preceding botanists, though occasionally referred to in books of science, are almost buried in oblivion.

Carl von Linné, or Charles Linnæus, was born in the year 1707, at Râshult, a village in the province of Smaland, in Sweden. His ancestors were humble peasants; but by gradual refinement in their ideas, being induced to leave the plough for more liberal pursuits, they relinquished their original name with their primitive occupation. In the beginning of the seventeenth century, regular and hereditary surnames were first adopted in Sweden; and literary men, on any particular occasion, often chose fresh appellations from natural objects, borrowing the Latin or Greek derivation and structure, and retaining the termination proper to the learned languages. In conformity with this pleasing custom, the ancestors of this great man took the name of Lindelius, Tiliander (linden-tree-man), from a lofty linden-tree, *(Tilia Europæa)*, which stood in the vicinity of their native place. Nicholas, the father of Charles, after struggling through many difficulties, had qualified himself to enter the church; and at the time of the birth of Charles, who was his eldest child, he was pastor of the village of Stenbrohult. Being passionately fond of gardening, he followed the example of his kindred; and when he first went into holy orders, borrowed from the same tree the name Linnæus, which his son has rendered immortal in every part of the civilized globe.

This worthy father had a large collection of rare and foreign plants in his garden, which, with his little mansion, was situate in a delightful spot, on the banks of a fine lake, surrounded by hills and valleys, woods, and cultivated grounds. Here he spent much of his time; and here CHARLES, almost as soon as he had left his cradle, was his constant companion, and imbibed under his auspices, that pure and ardent love of nature for its own sake, with that habitual exercise of the mind in observation and activity, which ever after marked his character. Thus were the infant steps of young LINNÆUS guided by his father's hand, amid

Queen lilies, and the painted populace
Who dwell in fields, and lead ambrosial lives.

"But his bent," to quote his own words, "was first decidedly displayed on the following occasion:—He was scarcely four years old, when he accompanied his father to a feast at Mökler; and in the evening, it being a very pleasant season of the year, the guests seated themselves on some flowery turf, listening to the pastor, who made various remarks on the names and properties of the plants, showing them various roots," &c. The child paid the most uninterrupted attention to all he saw and heard; and such an impression did this first botanical lecture make upon him, that afterwards he used to ask his father the names and properties of all the plants he could procure: and, even at that early age, he began to attend to the habits and distinctions of animals and insects also. His youthful inaptitude for retaining the names of natural objects sometimes tired and displeased his instructor; for, like other children, he used immediately to forget what he had learned, and especially the *names* of plants. Hence the father was sometimes put out of humour, and refused to answer him, unless he would promise to remember what was told him. By this means, wholesome paternal authority in time corrected so serious a defect, and perhaps early prevented his falling into the error of those desultory speculators of nature, who have agreed to despise that methodical and didactic precision of ideas, which, for want of early discipline, they could never attain. The memory of LINNÆUS, indeed, like his powers of perception, was naturally good, and his sight was always remarkably acute. The vivacity and brilliant expression of his eyes are said to have lasted through life, and indeed are displayed in most of his portraits.

At eight years of age, he had a separate plot of ground assigned him by his father, which was dignified with the name of "Charles's Garden;" and many an excursion did he make to the neighbouring woods and meadows, for plants and flowers, wild herbs and weeds, wherewith to increase its stores. He even colonized it with wild bees and wasps; but their hostile demeanour threatening the safety of the paternal hives, and his ill weeds verifying the old proverb of thriving apace, he was forced occasionally to submit his little domain to the more discriminating eye and experienced hand of his father.

The fondness of young Linnæus for plants, which showed itself at so early an age as to appear almost instinctive, may thus readily be derived from the father's taste for horticulture, and for the collection of wild flowers from the woods and fields around his little mansion.

These flowery studies, however, were at length obliged to give way, in some measure, to less agreeable occupations; and, unhappily, the private tutor proved a man of less winning manners than the beloved parent. At seven years of age, grammar had but an unequal contest with botany, in the mind of the young student. Being intended for the church, that he might one day succeed his father in the pulpit, he was sent at the age of ten to the Latin school of Wexio; but the living book of nature possessed far greater attractions for Charles Linnæus, than all the laboured tomes of the "illustrious dead." He was examining plants, when he should have been consulting his dictionary; and writing descriptions of them, when he was required to be composing themes. In 1722, he proved competent, nevertheless, to be admitted to a higher form in the school; and in 1724, being seventeen years of age, he was removed to the superior seminary, or gymnasium: but the original inclinations of his mind, and its early prejudices, here grew but the more apparent. He had no taste for Greek or Hebrew, ethics, metaphysics, or theology: but he devoted himself with success to mathematics, natural philosophy, and a scientific pursuit of his darling botany. Whenever he could escape from the school, he was off to gather botanical specimens in the fields and woods. His literary reputation made so little progress, that, when his father paid a visit to Wexio, in 1726, to bring him home from the gymnasium, with the intention of sending him to the university, his tutors, like the sapient instructors of Newton at Cambridge, gave him up as a hopeless dunce.

Linnæus, grieved to the heart at beholding the mortification of his parents, whom he held in equal reverence and love, promised them that he would, for their sakes, apply himself most assiduously for the future to the study of divinity; though he at the same time acknowledged, that he had himself no inclination whatever towards the sacred calling. His father, too conscientious to force upon him an office which ought never to be undertaken but from the purest motives, and too prudent to encourage him further in researches which he had not the means of bringing to any beneficial result, determined on a line of life for his son, equally removed from the irksomeness of study and the uncertainties of philosophy; and actually proposed, in accordance with the advice given him by the professors of the college, binding him apprentice to some mechanical occupation. He had, in fact, made up his mind to article him to a shoemaker or a tailor, when he fortunately happened to call upon a Dr. ROTHMANN, a physician in the town. He mentioned his intentions with regard to his son, and the vexation his conduct had occasioned him. ROTHMANN took a more considerate, and as it turned out a much truer, view of the case, than either the young man's masters or his father had done. It was pretty evident, he acknowledged, that CHARLES was not likely to become a luminary of the church;

but it did not follow from that, that he might not succeed in a more congenial profession: and he encouraged him to hope much, from the inclination of his son to natural knowledge and practical observation. In short, the benevolent physician ended the conversation, by proposing to the clergyman to take his son into his own house, for the year during which he was still to remain at the gymnasium, if he would permit him to continue his studies, not in divinity, but in medicine. Such an offer, which, besides other valuable advantages, promised so much to lighten the expense of the young man's education, was gladly accepted. The worthy preceptor gave his pupil a private course of instruction in physiology on the Boërhaavian principles, in order that he might make a more rapid progress in the study of physic; and was rewarded by the success of his endeavours.

Until this auspicious period, Linnæus had followed no regular plan or scientific arrangement in the study of botany and natural history; but meeting in Rothmann's library with the Elements of Botany (*Institutiones Rei Herbariæ, Paris,* 1700), by the celebrated Tournefort, the greatest botanist of his time, his fate was at once decided. He eagerly endeavoured to guide his own researches by the light of Tournefort's discoveries; but little did he think, that he would one day surpass this great luminary, and shine forth a sun of science in himself, to throw light over all creation.

Next year, LINNÆUS proceeded to the university of Lund. We must not, however, omit the amusing, and as he calls it himself, "not very creditable certificate" with which he was dismissed by the head-master of the gymnasium: "Youth at school," it said, "may be compared to shrubs in a garden, which will sometimes, though rarely, elude all the care of the gardener; but, if transplanted into a different soil, may become fruitful trees. With this view, therefore, and no other, the bearer is sent to the university, where it is possible that he may meet with a climate propitious to his progress." But LINNÆUS, by the favour of a friend, found means to get his name enrolled in the classes, without showing this document, the horticultural style of which, at any rate, was so appropriate to the subject. On the 19th of August, 1727, he underwent with credit the examination of the dean, and even of the professor of eloquence.

At this university he devoted himself to the study of medicine, and had the good fortune to ingratiate himself with STÖBÆUS, professor of physic and botany, who took him gratuitously into his family, and gave him access to his library and well-arranged museum, thus following the generous example of Dr. ROTHMANN. There is something in this noble fostering and protection of genius, almost as sacred and sublime as in the possession of genius itself; and never may the hallowed names of persons illustrious by their talents and their worth go down to posterity, without the names of those by whom they have been befriended in their difficulties accompanying them, as equally deserving the admiration and gratitude of mankind!

Under the instructions of his new friend, LINNÆUS began to arrange the stores of knowledge which he had already obtained. He had never before seen a museum of objects connected with natural history, properly classed, like that of STOBÆUS: it contained, likewise, several curiosities which he had till then had no opportunity of examining. He pored over them with the most eager delight; and from that time began to keep a regular herbal himself, making excursions into all the neighbouring districts for the purpose of augmenting it, exploring the animal as well as the vegetable productions of nature, and enriching his collections every day by his indefatigable industry and rapidly-increasing knowledge. During one of his excursions he was stung by a small serpent not uncommon in Sweden, and which he afterwards described, in his System of Nature, under the appropriate title of Hell Fury, ***Furia Infernalis.*** The venom of this reptile poisoned his blood, and brought him so near the grave, that it required all the skill of STOBÆUS to save him. Nevertheless, his love of nature was so far from being damped by this alarming accident, that it only increased his desire of enquiring into her secrets, so subtle and profound. The day was not long enough for his active occupations, and he borrowed the silent hours of night for the more tranquil investigations which the works of the learned afforded him.

A pleasing anecdote is related of him during his residence in this house:—As he was of a social, convivial turn, and was known to sit up late at night, the professor suspected that his vigils passed in cards, or some other employment equally unprofitable. He therefore came suddenly into the young man's apartment, at a late hour; when, instead of amusements of that kind, he found him entrenched amidst the works of TOURNEFORT, BAUHIN, CÆSALPINUS, and other great botanists. This discovery, as might be supposed, rendered him a greater favourite with the professor than before.

In the ensuing summer, LINNÆUS passed the vacation under his paternal roof. Here he met with his former patron, ROTHMANN, by whose advice he was induced to quit Lund for Upsal, the first and most ancient seat of the Swedish muses, as a superior school for medicine and botany. It offered so many advantages for study, that, notwithstanding the pecuniary difficulties which stood in his way, his eager desire after knowledge caused him to defy every obstacle; and he arrived at Upsal, the scene of his future greatness, the richest in information, and the poorest in finances, perhaps, of any student that had ever entered her walls!

But the slender support which his father could afford him of two hundred silver ducats, or about eight pounds sterling, being totally inadequate, he was, in this new situation, reduced to the greatest necessity. Private pupils were not to be procured by a poor, unknown student. He was obliged to trust to chance for a meal; and, when he relates that he had no way of mending his shoes but by folded paper, he seems to have felt the want even of the cobbler's education which had been recommended to him. He found abundant reason to repent of having quitted the friendly roof of Stobæus, who was much offended that a pupil, whom he had treated so kindly, should have left the university without consulting him. He did not however, relax in his studies; but constantly attended lectures, and made critical manuscript remarks upon all that he saw and heard.

The medical professors at Upsal at that period, namely, in 1728, were Olaus Rudbeck, junior, and Roberg, both old men, and little inclined to improvement; but Olaus Celsius, the professor of divinity, was the best botanist in Sweden, and zealous for the science. He was absent for some time after the arrival of Linnæus, whose difficulties had arrived at a height which scarcely seemed to admit of aggravation. This was every way a misfortune to Linnæus, as it deprived him, not only of the professor's instructions, but of the benefit also which his countenance and assistance might have procured him. But the gloom was suddenly dissipated by the arrival of the good doctor from Stockholm. This learned man, immediately after his return, hastened to the botanical garden. Linnæus was there as usual. The professor and the student entered into conversation respecting the plants. The enthusiasm with which Linnæus expatiated on their beauties, the exactness with which he described their characteristic differences, and the depth of his information on all subjects connected with natural history, equally astonished and delighted CELSIUS. He made inquiry into the young man's circumstances and conduct; and finding that he was both in need of assistance, and every way worthy of it, generously took him into his own house: and ever afterwards treated him with paternal kindness. CELSIUS had then been intent, for above thirty years, upon the illustration of the plants mentioned in the Holy Scriptures, on which he published a very celebrated work, his *Hierobotanicon*, in 1745, having travelled to the east on purpose to render it more perfect. LINNÆUS in some measure repaid the kindness of the professor, by assisting him in the composition of this work.

Among all his patrons, LINNÆUS cherished most the memory of this venerable man, and never spoke of him but in terms of reverence and gratitude. It was under his roof, that LINNÆUS first conceived the idea of forming the New System in Botany, by which he afterwards immortalized his name; for about this time, a small work of VAILLANT, a very ingenious French botanist (his *Sermo de Structurâ Florum)*, falling into the hands of LINNÆUS, it afforded him the first notions of those sexual distinctions of flowers, which afterwards became the ground-work of his celebrated system. LINNÆUS had been accustomed to class vegetable productions according to the form of the flower or blossom, in conformity with the method laid down by TOURNEFORT; but attracted by these new views of the vegetable creation, he pursued the subject with many additional observations, and drew up a manuscript-treatise on the sexes of plants. Here it may not be improper to remark, that the doctrine that plants had distinct sexes was by no means a new one; but it remained for LINNÆUS clearly to elucidate this obscure and intricate subject, to demonstrate its universality, and to make it subservient to system. This attempt came to the knowledge of Professor RUDBECK; and gave him such an opinion of the writer, that he took LINNÆUS into his house, and appointed him his assistant-lecturer. This was in 1730, when LINNÆUS had completed his twenty-third year. Thus the path to fame and advancement was laid open to him, and the whole remainder of his life consisted in a continual and rapid progress through it.

Nothing, however, seems to have been recollected with so much satisfaction to himself, in relating the events of this part of his life at Upsal, as his intimate scientific friendship with PETER ARCTEDIUS, who also afterwards called himself ARTEDI, and became so famous in the knowledge of fishes and umbelliferous plants; for ARTEDI had, like LINNÆUS, devoted himself to the study of nature, and, like him, had had to contend with the greatest difficulties in his pursuits. They passed some time together subsequently in Holland, when LINNÆUS witnessed the melancholy fate of his friend, who was accidentally drowned at Amsterdam, one night in returning from a visit in the country. LINNÆUS raised the best monument to his memory, by publishing an elaborate work on Ichthyology, or the Natural History of Fishes, which ARTEDI left behind him, and prefixing to it a just eulogium on the genius and industry of the author, and a touching declaration of his sorrow for his loss.

A new object soon engaged the attention of our young naturalist, whose reputation was now established in the university. Towards the end of the year 1731, the Royal Academy of Sciences at Upsal came to a resolution, to send a traveller into the remote and desolate regions of Lapland, with the sole view of examining into its productions and natural curiosities. CELSIUS and RUDBECK, the benefactors of LINNÆUS, were applied to as the fittest persons to nominate one who should unite the greatest number of qualifications requisite for such an undertaking. It is, perhaps, scarcely necessary to say, that their immediate and united choice fell upon LINNÆUS. He set out from Upsal on horseback, May 12, 1732 (O. S.), without incumbrances of any kind, and bearing all his luggage at his back. In the flower of youth, bold, enterprising, and in robust health, he was well adapted to such a hazardous enterprize. After visiting the Lapland Alps on foot, and descending to the coast of Norway, of which he has given a most picturesque and striking description, he returned by Tornea, and the east side of the Bothnian gulf, to Abo, and so to Upsal, which he reached on the 10th of October, having in five months performed, mostly on foot, a journey of near four thousand English miles, for which the academy allowed him his expenses, amounting only to ten pounds sterling (such was the poverty of Sweden at this period !) ; but they showed their sense of his industry and discrimination, by electing him, on that occasion, one of their members.

LINNÆUS endured incredible hardships in traversing the barren provinces of Lapland. The natural dreariness of the country was increased by the lingering severities of winter; for his impatience had not suffered him to listen to the strenuous advice of his friends, to delay setting off until the summer should be fully advanced. Bogs and forests every where intersected his way: he frequently had to cross rivers swelled into torrents; and often found himself on the opposite side, gained at the risk of his life, without any prospect of a roof to shelter him, or food, of even the coarsest kind, to satisfy his hunger. But, in the midst of these difficulties, nothing had escaped his notice: poor and barren as was the country through which he had travelled, he brought from it above a hundred plants entirely unknown or undescribed before. The curiosities of the animal reign, the face of the country, the manners of the inhabitants, and the political and moral considerations connected with them, were all likewise set forth by him, in the most luminous and interesting manner. So it is, that the observant mind will ever find, in even the most unpromising regions, matter of reflection.

In the course of this tour, he gave a convincing proof of the utility of botanical science, in detecting the cause of a dreadful disease among the horned cattle of the north of Lapland. At Tornea he was informed, that a great many of them had died in the winter; but that the disease was still more prevalent in the spring, when the cattle were first turned out to grass. The inhabitants were totally unable to account for it or to remedy it. On examining the place where the animals had fed, LINNÆUS found it to be a marsh, in which the *Cicuta virosa*, one of the most violent of vegetable poisons, grew in abundance. By pointing out the plant, he enabled the people to guard against the danger ever after. In this instance, as well as in many others, we behold a triumphant answer to the question frequently asked by uninformed persons—"What is the use of botany?"

The following is an animated account which he has given us of a danger from which he was near perishing, when in the districts of Pithea and Lulea on the Gulf of Bothnia:—"Several days ago, the forests had been set on fire by lightning, and the flames raged at this time with great violence, owing to the drought of the season. I traversed a space, three quarters of a mile in extent, which was entirely burnt, so that the place, instead of appearing in her gay and verdant attire, was in deep sable: a spectacle more abhorrent to my feelings than to see her clad in the white livery of winter. The fire was nearly extinguished in most of the spots we visited, except in ant-hills and dry trunks of trees. After we had travelled about half a quarter of a mile across one of these scenes of desolation, the wind began to blow with rather more force, upon which a sudden noise arose in the half-burnt forest, such as I can only compare to what may be imagined among a large army attacked by an enemy: we knew not whither to turn our steps. The smoke would not suffer us to remain where we stood, nor durst we turn back. It seemed best to hasten forward, in hopes of speedily reaching the outskirts of the wood; but in this we were disappointed. We ran as fast as we could, in order to avoid being crushed by the falling trees, some of which threatened us every minute. Sometimes the fall of a huge trunk was so sudden, that we stood aghast, not knowing whither to turn to escape destruction, and throwing ourselves entirely on the protection of providence. In one instance a large tree fell exactly between me and my guide, who walked not more than a fathom from me; but, thanks to God! we both escaped in safety. We were not a little rejoiced when this perilous adventure ended, for we had felt all the time like a couple of outlaws, in momentary fear of surprise."

The particulars of this interesting expedition, which produced his *Flora Lapponica,* the plants of which he arranged according to his newly projected sexual system, have been given to the public, in an English translation of the original journey written on the spot, illustrated with wooden cuts from his own sketches, making two octavo volumes. This document, a faithful transcript of his own mind, and written solely for his own use, gives a most amiable and respectable idea of the character and acquirements of this celebrated man, at this period of his life.

The description which he gives in this tour, of the humble little plant, *Linnæa,* is not the least pleasing particular to be found in it, on account of the association with which it is connected; for his own "neglected fate and early maturity are said to be typified by it." He describes it as clothing masses of stones, being interwoven with ivy, in a picturesque manner; and he seems to have chosen it himself to commemorate his own name, when he gathered it at Lyksele, May 29, 1732. Former botanists had called this elegant and singular little plant, *Campanula serpyllifolia;* but LINNÆUS, prosecuting the study of vegetables on the only certain principles, the structure of their parts of fructification, soon found this to constitute a new genus. He reserved the idea in his own breast, till his discoveries and publications had entitled him to botanical commemoration; and his friend GRONOVIUS, in due time, with his concurrence, undertook to make this genus known to the world. It was published by LINNÆUS himself, in the *Genera Plantarum*, in 1737, and the same year in the *Flora Lapponica*, with a plate, being moreover mentioned in the *Critica Botanica*, as "an humble, despised, and neglected Lapland plant, flowering at an early age,"[1] like the person whose name it bears.

Scarce recovered from the fatigues of this tour through Lapland, he again felt the pressure of poverty; but having learned the art of assaying metals during ten days' residence at the mines of Biorknas, near Calix, in the course of his tour, he next year gave a private course of lectures on that subject, which had never been taught at Upsal before. The novelty of his information on all the subjects on which he treated, the vivacity of his feelings, and the graces of his delivery, soon gained him great celebrity. Unfortunately, his rising fame excited envy, jealousy, and all the baser passions, in a quarter where he ought only to have found admiration and encouragement. A young man of the name of ROSEN had succeeded Professor RUDBECK, in his anatomical and physical office. In ability, he was a fit successor to that worthy man; but how different were the feelings which animated his breast! Instead of entering with generous emulation into the lists of science with LINNÆUS, he became envious of his rising fame, and descended so low as to procure, partly by intreaties, partly by threats, the loan of his manuscript Lectures on Botany, which LINNÆUS detected him in surreptitiously copying. Dr. ROSEN had taken by the hand a young man, named WALLERIUS, who afterwards became a distinguished mineralogist; and for whom he now procured, in opposition to LINNÆUS, the new place of *Adjunct*, or assistant in the medical faculty at Lund. But the basest action of ROSEN, and which proved envy to be the sole source of his conduct, was, that, having married the niece of the archbishop, he obtained, through his lordship's means, an order from the chancellor to prevent all private medical lectures in the university. He thus meanly sought to strangle the reputation of LINNÆUS in its birth, and to deprive the world of the benefit of his knowledge, because it had not been acquired under all the strictness of academical forms. Poverty had prevented LINNÆUS from taking his degrees: his lecturing was, therefore, against the statutes of the university; and ROSEN had the cruelty to demand, that the prohibition should be carried into force. Many of the members were anxious to waive it, in consideration of the virtues and talents of him at whom it was now pointed; but Rosen, goaded on by personal hatred, insisted upon the law being held inviolable, and Linnæus was accordingly forbidden to continue his lectures.

This procedure, for which there could be no motives but conscious inferiority and malice, deprived Linnæus of his only means of subsistence, and the students of any information which might endanger their reverence for his rival. Stung to the quick with this ungenerous treatment, which blasted all his prospects, Linnæus was provoked to show his resentment in a very unwarrantable manner. He drew his sword on Rosen as he came out of the senate-house, and was with difficulty prevented from running him through the body. This unjustifiable act might have been the entire ruin of Linnæus, had he been proscribed according to the law in consequence of it, as he could then never again have made his appearance in Upsal. But his friends and protectors, at the head of whom was Olaus Celsius, pitying the irritated state of his feelings, and reverencing his excellencies, exerted themselves so effectually in his behalf, that the only punishment he incurred was a reprimand.

Still the injury that Rosen had inflicted upon him rankled in his heart. The beauties and wonders of nature no longer soothed him, as they had before done, under his privations. All his past sorrows were light in comparison with the anguish he now endured: never before, indeed, had he known real affliction; for never before had his inward self been ruffled, the serenity of his soul disturbed. He still meditated the design of taking away Rosen's life; and, haunted with this terrible idea, how could he derive consolation from the calm pursuits, which had hitherto engrossed all his thoughts! At length, his better feelings prevailed. He awoke one night in unspeakable horror: his imagination was thronged with the most frightful images: he called in reason to his aid, and severely tasked himself for thus giving up his mind to one dominant idea, and that altogether a mistaken and indefensible one. Religion added more holy arguments: his passion subsided, and he was once more happy; for he once more found himself in possession of his own esteem and a mind at ease. In grateful recollection of the impression thus made upon his conscience, and to act as a guide to himself on future occasions, he began to compile for his own edification, under the title of *Nemesis Divina*, such instances of punishments inflicted by divine Providence, and such sudden catastrophes and adversities, as came within his own sphere of observation, illustrating the words in scripture—" Vengeance is mine : I will repay, saith the Lord." It may be added, that in a few years afterwards LINNÆUS was chosen to occupy the very same chair which his antagonist then possessed ; and that ROSEN, towards the close of his life, was glad of the medical aid of the man he had in vain endeavoured to crush.

Disappointed in his views of medical advancement, LINNÆUS turned his thoughts more immediately to the subject of mineralogy. In the end of the year 1733, he had visited some of the principal mines of Sweden, and had been introduced to Baron REUTERHOLM, governor of the province of Dalarne, or Dalecarlia, resident at Fahlun. This place LINNÆUS has perpetuated in the memory of botanists, by his *Lichen Fahlunensis*, a production more resembling some ramification of the neighbouring copper ores than any thing of vegetable origin. At the persuasion as well as at the expense of the governor, he travelled through East and West Dalecarlia, across the Dalecarlian Alps, and through a large part of Norway, accompanied by seven of his ablest pupils. They collected in their way many important observations and discoveries in geography, and the different branches of natural history; and the unpublished journal of his tour exists in his library.

On his return from this excursion, LINNÆUS took up his abode for a month at Fahlun, the residence of Baron REUTERHOLM, under whose auspices he established a little college, and began to give lectures on the art of assaying metals, and other branches of mineralogy. His auditors were attentive to every thing he said; for, exclusive of the merits of his oratory, their interests were closely connected with his instructions. Where, indeed, could lectures on mineralogy be delivered with more chance of success, than in a town situate among mines, in whose produce the inhabitants were all more or less concerned?

Under such favourable circumstances, LINNÆUS found himself richer, both in friends and money, than he had ever been before. Among those who welcomed him most kindly to their firesides was Dr. MORÆUS, a man of eminence, and physician to the province: he was justly esteemed for his learning and skill, and not held in less consideration among his neighbours for being accounted one of the richest men in the district. The doctor had plants and flowers which excited the admiration of the young botanist; but he had a fairer flower than any which LINNÆUS had ever yet beheld in garden or meadow. His eldest daughter, SARAH ELIZABETH, immediately won the heart of our botanist, who pleaded his love with the vivacity and earnestness that characterized him in all his pursuits, and soon gained an acknowledged return to his passion, the more flattering, as the young lady had just before refused a baron, who had paid his addresses to her with great ardour. But though thus assured of the affections of his mistress, LINNÆUS, conscious of his poverty, felt great trepidation at the thought of asking her of her father. "At last," says he, speaking of this interesting and important epoch of his life, in a letter to his friend Baron HALLER, "At last I ventured. MORÆUS consented, and refused. He loved me, but not my uncertain and adverse fate. He finally declared, that his daughter should remain unmarried three years longer, and that at the expiration of that time, he would give his ultimate decision." The good doctor, more cool and considerate than the young and fond lovers, foresaw that a poor, friendless young man, without any fixed profession or employment, was not likely to improve his own or his daughter's happiness by such a rash step.

It was from this prudent motive, that he pursuaded LINNÆUS to delay the match. At the same time he strongly recommended to him the study of medicine; for, having been rewarded in his own medical career, by the suffrages of both fame and fortune, he naturally regarded his profession with partiality, and was desirous that LINNÆUS should take the degree of doctor of physic, in order that he might have some more certain means of subsistence to depend upon, than could result from his being merely a botanist. Nothing could be more reasonable than this proposal. LINNÆUS summoned his philosophy to his aid, and love lent him new energy to encounter difficulties. It was customary at that time for Swedish students to take their degrees in foreign universities: and LINNÆUS fixed on that of Harderwyk, in Holland, as the least expensive: but, even on the most frugal scale, the sum required for the step he was about to take was almost beyond his very limited means. By dint, however, of saving from his lectures, and from a small pension which he had enjoyed two years from the university of Upsal, he found himself in possession of thirty-six gold ducats. Before his departure, too, his ELIZABETH brought him her accumulated saving of pocket-money, amounting to a purse of one hundred dollars, and laid it at his feet as a love-offering and unequivocal proof of her attachment. He pressed her fair hand, kissed her fervently, and with a heart glowing with the most unbounded attachment, and admiration of her generosity, he bade her farewell.

Many a poetical lover would have gone forth dreaming in reverie, writing sonnets alternately to his mistress and the moon, and ever and anon bewailing his hard fate at the awful and interminable separation. Not so our philosopher: he went forth cheered and stimulated with the thoughts that there was one who loved him and his pursuits, and to merit whose love he was resolved to strain every nerve in the path of learning and distinction.

With the sums above mentioned, LINNÆUS set off to Holland, in April, 1735, when he was in his twenty-eighth year, after having visited his father, lately become a widower. He took his course by Hamburgh, where he rested some time, greatly interested with the fine specimens of natural curiosities which he saw in the museums and collections in that city, and delighting the most learned men there with the extensiveness of his information, and the ingenuity of his theories. Among those whose friendship he more particularly gained was SPRECKELSEN, a Secretary of Council, and eminently skilled in botany and natural history. This gentleman, nevertheless, laid himself open to the imputation of great credulity, or of still greater knavery, by preserving with the utmost care, in his cabinet, as an extraordinary curiosity, what was supposed to be a hydra or water-serpent with seven heads—a monster of which all Hamburgh was not a little proud; insomuch, that although thirty thousand rix-dollars had been offered for it by FREDERICK IV. of Denmark, the sum had been refused. LINNÆUS, never disposed to take any thing upon trust, examined the supposed serpent with his wonted penetration; and found that the seven heads consisted of nothing but the jaw-bones of weasels, artfully covered with the skins of serpents. LINNÆUS probably took little credit to himself for a discovery, which the great difference of structure between the jaw-bones of weasels and of serpents rendered palpable enough to any one accustomed to comparative anatomy; but, in thus stripping the serpent of its borrowed plumes, he unintentionally did an injury to SPRECKELSEN, which he had in no way contemplated. With all its seven heads included, the serpent had been reckoned of sufficient value to be accepted as security for ten thousand marks (£750): it was now scarcely deemed worth one hundred; and all who were interested in its pecuniary value raised such an outcry against LINNÆUS for destroying its renown, that it was adjudged he should hold a public disputation on the subject, and either prove the truth of his opinion by irrefragable arguments, or reinstate the serpent in its importance by a candid avowal of his error. By the advice of Dr. JACNISCH, a learned physician, who had shown him much friendship, he resolved to avoid a discussion which was sure to be productive of ill-will towards himself, and mortification to many from whom he had received kindness; and he accordingly left Hamburgh and proceeded to Harderwyk, where he took his degree of Doctor in Medicine the same summer, with great credit. He chose for the subject of his inaugural thesis, the Causes of the Cold Intermitting Fever; and displayed in his hypothesis the same depth of investigation, and originality of thought, which are manifested in all his works.

As soon as he had taken his degree, LINNÆUS proceeded to Leyden; and formed an intimacy with VAN ROYEN, VAN SWIETEN, LEIBURKUHN, LAWSON, and GRONOVIUS. Among the causes which contributed to enlarge the views and ripen the judgment of LINNÆUS, may be reckoned the facility with which he made himself known and regarded by the most learned men of his time. Wherever he came, he found a friend; and that friend generally of the first reputation in the sciences he studied.

In this year he laid the foundation-stone of that splendid temple of nature, in which he afterwards saw the most enlightened men on the globe officiating as her priests, by publishing the first edition of his *Systema Naturæ,* consisting of eight large sheets, in the form of tables, which edition is now a great bibliothecal curiosity. It contained a view of the animal, vegetable, and mineral kingdoms—slight in comparison with his subsequent performances, but sufficiently indicative of his vast and inventive genius, to gain it the greatest attention and applause. It was, indeed, the germ of that work of natural history which was a few years afterwards adopted throughout the world, and spread the fame of its author to the remotest corners of civilization. BJOERNSTALH, the Swedish traveller, gives a convincing proof of the extended circle in which the knowledge of it was diffused. At Tharapia, in Turkey, he saw a Greek walking about in a field, with a book in his hand. Struck with a spectacle so uncommon in that part of the world, he had the curiosity to inquire what the work might be. The Greek, who had been formerly first physician to the Pacha of Egypt, informed him that it was by *the Great Man in Europe;* and upon examination it proved to be the System of Nature by LINNÆUS.

The first advantage which LINNÆUS derived from the publication of his work was, the introduction it procured for him to BOERHAAVE, the celebrated physician, whose renown had extended so far, as to bring him a letter from the Emperor of China, which was duly delivered, though directed simply—“ To BOERHAAVE, the famous Physician in Europe.” LINNÆUS had wished particularly to see and converse with this great oracle in medicine; but he could not indulge a hope of doing so, for BOERHAAVE, owing to his infinite occupations, and strict regularity in getting through them, had great difficulty in granting an audience even to those with whom he was acquainted. PETER THE GREAT himself had waited several hours in his ante-chamber, before he could obtain an interview with him; and it was constantly thronged with princes, ambassadors, statesmen, and persons of the first distinction, who enriched the servants by bribing them to facilitate, if possible, the means of access to their master. Under such circumstances, how could LINNÆUS, poor and a stranger, hope for admittance, where rank and influence so often presented themselves in vain? Yet so it was, that the tribute which was withheld even from royalty itself, was gladly paid at the shrine of kindred genius. The day before that on which LINNÆUS had fixed to leave Leyden, he received an invitation from BOERHAAVE, in consequence of having presented him with his *Systema Naturæ*, to visit him at his country-seat; and was received by the venerable old man, then in his sixty-seventh year, with the greatest cordiality.

BOERHAAVE had an excellent botanical garden, and a fine collection of exotics. He showed his visitor all his vegetable treasures, and was astonished at the fulness and exactness of his knowledge. He strongly advised him to stay in Holland, to reap the fame and fortune which must inevitably at last reward his attainments. LINNÆUS candidly acknowledged to him, that so far from being able to take up his abode in Holland, he had not the means of staying in it a single day longer. BOERHAAVE, still wishing to serve him, then told him that he would give him a letter of recommendation to his pupil, JOHN BURMANN, Professor of Botany in Amsterdam, from which city LINNÆUS intended to sail for Sweden. BURMANN was at that time preparing a Description of the Plants of the Island of Ceylon (his *Thesaurus Zeylanicus)* ; and so delighted was he with the information and zeal of LINNÆUS, that he took him into his house as his guest for some months, and requested his assistance in that work.

BURMANN had a fine collection of natural curiosities, and a well chosen library on all subjects connected with botany and natural history. LINNÆUS availed himself of the opportunity of studying them to complete several of his works, among which was his ***Fundamenta Botanica***, a small octavo of thirty-six pages, in the form of aphorisms, which contains the very essence of botanical philosophy, and has never been superseded nor refuted. The subsequent performances of the author himself, and of his followers, have been excellent, in proportion as they have kept to the maxims of this little book.

After LINNÆUS had been a few months under Professor BURMANN'S roof, he received a most gratifying proof of BOERHAAVE'S continued wish to serve him, in an introduction from that great man to MR. GEORGE CLIFFORT, a rich burgomaster of Amsterdam, who had a magnificent country-seat and garden at Hartecamp, near Haarlem. This gentleman wished for the assistance of a man who could arrange his collections of natural history, and put his garden into order. BOERHAAVE mentioned LINNÆUS to him, as fully capable of doing it for him, and also of attending to his general health, which was subject to bilious attacks. CLIFFORT, much pleased with the proposal, invited BURMANN to come to Hartecamp, and bring LINNÆUS with him. He showed them his plants; and his hot-houses, which contained many rare and valuable productions from the Cape of Good Hope. LINNÆUS examined them all with the utmost attention, described those that were known, and pointed out those that were new; insomuch that CLIFFORT was enraptured with his knowledge, and not less so with his agreeable manner of imparting it.

After a long conversation on botany, the party adjourned from the garden to the library. BURMANN found there the second part of Sir HANS SLOANE's Natural History of Jamaica: he had not seen it before, and was highly delighted with it. "I have two copies of it," said CLIFFORT, good humouredly, "and you shall have this, if you will give me LINNÆUS in exchange." A proposal thus made in apparent jest, soon led to a more serious one. CLIFFORT invited LINNÆUS to live with him as his physician and botanist;

and offered him, in return for his services, all his expenses, and a salary of one thousand florins per annum. LINNÆUS could not hesitate to accept a situation at once so honourable and so profitable. Here, as he says, " he lived like a prince." With an ample library, as well as garden, at his command, in both which he had unlimited powers to supply any defects that he might discover, he had now the means of cultivating his beloved science without restriction or impediment, and appears to have been truly sensible of the happiness of his lot.

An agreeable variation of his employments was a journey to England, in 1736, at CLIFFORT'S expense, to see the nurseries of London and Oxford, and the North American plants which were cultivated in these places. Sir HANS SLOANE was at that time at the head of natural history in this country: and LINNÆUS had a warm recommendation to him from BOERHAAVE, couched in such strains as the writer, who was a stranger to flattery, had never been known to use before.— " The bearer of this letter," said he, " is alone worthy of seeing you—alone worthy of being seen by you. He who shall see you both together, will see two men whose parellels will scarcely be found in the world." But, notwithstanding this valuable introduction, and notwithstanding Sir HANS

SLOANE's general benevolence and love of science, LINNÆUS did not find himself received by that venerable naturalist with the warmth he had anticipated. Sir HANS was, in fact, getting too old to enter into new theories; and LINNÆUS's bold attempts to introduce a new system of arrangement, and a simple nomenclature, into the science of botany and natural history, excited more jealousy in him than admiration.

LINNÆUS found more intelligent and communicative friends in Dr. SHAW, the oriental traveller, Professor MARTYN the elder, of Cambridge, the celebrated PETER COLLINSON, and the well-known PHILIP MILLER, the keeper of the botanic garden at Chelsea. It was not, however, till after some unpromising attempts, that he succeeded in inspiring the last-mentioned botanist with a favourable opinion of him. All the English professors, in fact, were warmly attached to the system of RAY. DILLENIUS, the Botanical Professor at Oxford, a man of superior knowledge, received him also at first with jealousy and dislike; but was at length so impressed with his talents, that he urged him to take up his residence there, offering to share the profits of his professorship with him. These men of true science admired his genius and valued his friendship: they promoted his wishes by every means in their power, enriching him with books, and supplying him plentifully with plants, both for his own herbarium, and the garden of his patron at Hartecamp. Of his observations on the natural history of this country, nothing is preserved but a tradition, that the golden bloom of the furze on the commons near London, especially on Putney heath, delighted him so much, that he fell on his knees in a rapture at the sight. He was always an admirer of this plant, and laboured in vain to preserve it through a Swedish winter in his greenhouse; as we in England are obliged to shelter the Cape shrub in a stove, though it covers walls in the open air at Paris.

On his return to Holland, he proceeded with renewed spirit and confidence in his great plan of botanical reform, and he gave to the world his first edition of the *Genera Plantarum* in the beginning of 1737. His fame had already begun to be noised abroad; for, in October, 1736, the Imperial Academy of Naturalists at Vienna had admitted him a member, under the honourable title, according to the custom of that body, of DIOSCORIDES THE SECOND.

He printed, in 1737, the *Viridarium Cliffortianum*, an octavo catalogue of his friend's garden, disposed according to his own sexual system; of which he published, later in the same year, at Leyden, an exemplification, under the title of *Methodus Sexualis,* in which all the known genera of plants are so arranged by name only. This year also produced his magnificent *Hortus Cliffortianus,* in folio, in which all the plants in Mr. CLIFFORT's collection, whether living or dried, are enumerated, with many descriptions and highly interesting remarks, an almost complete detail of synonyms, and some of the most exquisite plates ever seen in any book. This splendid volume was not published, but only given away by Mr. CLIFFORT. It was begun and completed in nine months. In the intervals of his labour, the *Critica Botanica,* an octavo volume, was written and printed. This is an entertaining commentary and illustration of part of the *Fundamenta,* from section 210 to 324, relating to nomenclature and specific characters. It is a book not so much known as it deserves, being very rare.

Thus did he publish, during this year, several laborious works, in which he completely established a new system of classification in botany and natural history, any one of which, produced in the same time, would have done infinite credit to his diligence. He gained the suffrages of all the most enlightened scholars and naturalists in Europe, not less for his admirable industry than his extraordinary genius. Indeed, the extent of his labours, and his indefatigable assiduity during this period, are almost incredible. There was almost no department of natural science which he did not investigate, and bring within the compass of his methodical arrangements; but botany was his chief and favourite study, and in this department he raised himself a reputation which can only perish with the science itself.

His incessant application, however, mingled with the anxiety which a mind of sensibility cannot but be conscious of, in a state of separation from a beloved object, was too great a trial for the health of LINNÆUS. Though he had every luxury and indulgence at his command, and was caressed by his patron and by all who came near him with the most flattering attentions, he longed to return to his native country, and to enjoy the society of his intended bride. Having left Mr. CLIFFORT towards the close of 1737 with this intention, he could not refuse his assistance for awhile to Professor ADRIAN VAN ROYEN at Leyden, in the arrangement and description of the garden there; and at this time he composed and printed the *Classes Plantarum,* which is a complete view of all the botanical systems ever known. Here also he published his friend ARTEDI'S *Ichthyologia.* LINNÆUS remained at Leyden till the spring of 1738; and no stronger proof can be given of the estimation in which he was held in Holland, than the regard expressed for him by BOERHAAVE, even on his death-bed. Before the time of LINNÆUS'S intended departure from Leyden, BOERHAAVE became too ill to admit visitors. LINNÆUS was the only person in whose favour an exception was made, that the dying physician might bid him an affectionate farewell. "I have lived out my time," said the venerable invalid, "and my days are at an end. I have done every thing that was in my power. May God protect thee! What the world required of me it has got, but from thee it expects much more. Farewell, my dear LINNÆUS!"

But amid his diversified scientific pursuits, he had not, as we have just stated, forgotten the fair flower of Fahlun, that he left so long ago lonely, amid the garden of the physician of Dalecarlia. There were not, however, wanting those, who suggested such vile suspicions as these to the fond maiden—that he had far exceeded the period of his stipulated absence; that he had wandered far and wide, and seen many new faces, and formed many fresh acquaintances; that his growing fame and reputation had absorbed all his other feelings; and that the praise and notice of the learned and the great had sophisticated his heart. One day, secret intelligence was brought to LINNÆUS that such insinuations were insidiously spread against him; and this, too, by one whose treachery stung him to the heart. He had regularly corresponded with his intended bride through the medium of a friend, for whom he had procured a professor's chair. This treacherous professor conceived a passion for the young lady; and in order to supplant LINNÆUS in her affections, basely took the opportunity of his protracted absence to insinuate those suspicions into the ear of Doctor MORÆUS and his fair daughter, alleging that her lover had settled in Holland, and was not likely to recal any of the associations of his early youth. LINNÆUS was so overpowered by the tidings of this heartless treachery and ingratitude, that he was seized with a deep melancholy, which terminated in a violent paroxysm of fever, bringing him to the very brink of the grave. His departure was consequently for some time prevented; but the skill of VAN SWIETEN, and the renewed attention of the amiable CLIFFORT, who received him again under his roof with the most liberal and indulgent kindness, after some weeks restored him so far, that he was able, though still weak, to set out on his journey. On reaching the more elevated country of Brabant, he felt in one day quite renovated, his whole frame being, as he expresses it, "freed from some great burden."

On his way home he determined to visit Paris, having a very handsome introductory letter from VAN ROYEN to ANTHONY DE JUSSIEU, the physician, who made him acquainted with his brother, the famous BERNARD DE JUSSIEU. From both of these illustrious men he experienced great kindness. At this city he stayed a month, and inspected the botanic garden, the herbariums of TOURNEFORT, VAILLANT, the JUSSIEUS, &c.; visited the neighbourhood of Fontainebleau, which he has celebrated for its *Orchideæ;* formed an acquaintance with REAUMUR and other distinguished naturalists; and received the high compliment of being elected a Corresponding Member of the Academy of Sciences.

The French, however, from their predilection for their countrymen, TOURNEFORT and VAILLANT, whom they justly esteemed two of the greatest botanists of the age, were not yet prepared for exchanging their system for that of

Linnæus; nevertheless, they afterwards did full justice to its ingenuity and consistency, and paid him the compliment of arranging the royal garden at Trianon in conformity with it, in preference to that of their own countrymen.

The limits of this memoir will not allow of giving a detailed account of the opposition which Linnæus met with, in his endeavour to effect so important a revolution in the history of nature, as an entire new classification and nomenclature of her three principal kingdoms. It involved him at first in controversy with all the most ingenious philosophers of the age, among whom was the great Haller, Linnæus's superior in general knowledge, but his inferior in originality and the spirit of system; but he finally received from all, the profoundest testimonials of their conversion to his notions, and their deference to his genius: and, when he died, three thousand letters from celebrated persons of all nations were found among his papers, all expressive of the regard and admiration of the writers.

There is, however, one particular in his conduct during his controversies which cannot be defended. The method which he was accustomed to take, in order to mark his sense of gratitude and of resentment towards foreign botanists, was to affix the names of his friends on beautiful and valuable plants, and those of his enemies on the ugly and noxious. Here was a display of that littleness of mind, which mixed itself with his great qualities; and the temptation thus to abuse the assumed botanical privilege of naming new plants after persons, justifies HALLER's objections to that common practice.

In the summer of 1738, he embarked at Rouen for Helsingburgh; and, without further delay, he hastened to assert the claims of love, and demand the hand of his ELIZABETH. The most amiable trait in the character of this lady was her constancy to LINNÆUS, notwithstanding the accusations of his perfidious friend. Though others might have doubted of his constancy, and despaired of his return, her heart was still unchanged. She had despised the insinuations, and repelled the advances of his rival; and she met her lover once more with smiles of love, and all the confidence of affection. They were formally betrothed to each other; but before they could marry, it was necessary that some prospect of an advantageous establishment should be discovered: for our philosopher, though rich in fame and acquirements, was still poor in this world's wealth. Stockholm was thought a promising theatre for a young man of talents in the medical profession; but it is mortifying to consider, how often it is the fate of genius to find its coldest encouragement among its nearest connexions. LINNÆUS, celebrated, respected, and beloved abroad, found himself treated with neglect and dislike in his native country. His abilities created envy, rather than inspired confidence; and whilst his botanical researches were treated with ridicule, on account of the novelty of the inferences he drew from them, his devotion to them was yet brought against him as an obstacle to his success in physic—as drawing his attention from the study of that profession, which he had found himself obliged to embrace for a subsistence. So great, indeed, was the opposition he met with on endeavouring to establish himself in medical practice, that he almost resolved to quit his native country; and had a letter from HALLER come to hand in reasonable time, in which that eminent person, indignant at the neglect with which LINNÆUS was treated by his countrymen, proposed in the most generous manner to resign to him his own Professorship of Botany at Gottingen, Sweden would probably have lost the honour and advantage of LINNÆUS's future residence.

But though penetrated with the liveliest gratitude at so great and unlooked-for a kindness, he had no occasion to avail himself of it. At the very time that it was made, his fortunes began to assume a different aspect. A singular cure which he made in the course of a fortnight, in a complaint of long standing, was noised abroad, and gained him much reputation. He was highly successful, also, in the cure of pectoral complaints. He had prescribed a medicine, made up in the form of lozenges, for the wife of an Aulic Counsellor, who was troubled with a cough. She happened to put one into her mouth when she was playing at cards with QUEEN ULRICA ELEONORA, who had a cough likewise. She enquired concerning the efficacy of the recipe, and the account she received induced her to send for LINNÆUS: he prescribed the same remedy, and her Majesty's cough speedily subsided. Once introduced at court, LINNÆUS's merits were certain to advance him there. They gained him the notice of Count TESSIN, who had been tutor to the King of Sweden, and was himself well versed in the sciences, and a great lover of natural history. The favour of this distinguished nobleman successively procured him a salary of a hundred ducats per annum from the states, in consideration of his exertions in the cause of science during his residence abroad;

the appointment of Physician to the Admiralty; the Professorship of Botany at Upsal; and the title of Dean, or President, of the College of Physicians.

Thus, loaded with honours, and the path of wealth as well as of fame opening before him, LINNÆUS met with no farther opposition to his suit from the father of his affianced bride; and he finally obtained her hand on the 26th of June, 1739, after an engagement of five years' standing. That same year, LINNÆUS had the glory of essentially contributing to the founding of the Royal Academy of Sciences in Stockholm, of which he was made President on its opening; and when he resigned the office, which was only to be held for three months at a time, he made a most admirable speech on the peculiarities of the insect-tribe, and captivated his audience by the depth and beauty of his observations on the excellence of nature, and the wisdom of all her arrangements.

His professional success did not lead him aside from his favourite studies; and he kept his eye steadily on the great object of his ambition, the botanical chair at Upsal. This he earnestly desired, because it would enable him to devote himself entirely to the improvement of natural history, uninterrupted by the cares of medical practice.

The death of RUDBECK, Professor of Botany, his early protector, taking place in 1740, opened to LINNÆUS a prospect of that literary station. It was however given to his old antagonist, ROSEN, because he had taken his degrees at an earlier period, and resided a longer time at Upsal. LINNÆUS did not scruple to acknowledge the justice of these claims. This disappointment was, however, softened by the choice which the Swedish diet made of him to take a tour, accompanied by subordinate naturalists, through some of the least-known provinces in the south of the kingdom, in order to promote useful knowledge and the improvement of agriculture. On his return from this agreeable and reputable mission, another professorship at Upsal, that of Physic and Anatomy, became vacant by the resignation of M. ROBERG, who had held it for more than thirty years; and, it being conferred on LINNÆUS, he removed thither, with his family, in September, 1741, and assumed his public functions. On this occasion, he pronounced a Latin oration—"On the necessity of travelling in one's own country." His own past exertions in this respect rendered it a very entertaining and interesting composition.

It was somewhat singular, that LINNÆUS and ROSEN should thus each be put into the situation which the other desired the most, and was most adapted for: but so it was; and aware that they were each intruding on the province of the other, with a frankness that did honour to them both, they mutually proposed an exchange of their professorships, which, with the consent of the Chancellor of the University, was effected in the most amicable manner in the beginning of the year 1742.

Shortly after entering upon the duties of his new situation, he made the tour of the islands of Oeland, and Gothland, by order of the States; and in subsequent years he travelled, on the same requisition, through West Gothland and Scania. Exclusive of these excursions, his abode was henceforth fixed at Upsal; and the remaining history of his life is only that of his literary and scientific labours, and of the honours and distinctions that were accumulated upon him.

We must now contemplate LINNÆUS at the very summit of his laudable ambition, surrounded with every material for virtuous happiness. The botanic garden at Upsal, from being one of the most flourishing in Europe, had, through a variety of unfortunate causes, degenerated into a mere tract of pasture-ground; but LINNÆUS created it anew, arranged the plants according to his own system, and in a few years raised such a temple to Flora, as had never before graced the northern regions. The Swedish government and foreign powers seemed to vie with each other in the homage they paid, and the services they rendered to the man, whose genius was an honour to his country and a benefit to the world at large. A delightful residence was built for him at the national expense, at the entrance of the botanical garden, which was enriched with presents from every collection in Europe; and it was the pleasing task of LINNÆUS, himself, to furnish it with all the plants indigenous to Sweden and Norway. He sent a student at his own expense to the latter country, for the most valuable of its botanical treasures. "Formerly," said he in letter to HALLER, "I had plants, but no money; and now, of what use is my money without plants?"

In 1745, LINNÆUS published the first edition of his *Flora Suecica*, an admirable specimen of a local catalogue, and the pattern of all those which have since been made upon the Linnæan system. In the next year, appeared his ***Fauna Suecica***, or Catalogue of the Animal Kingdom in Sweden, arranged also according to his own method. In the numerous and different class of insects, he adopted an entirely new mode of arrangement, which has been followed by most later entomologists. His merits, indeed, with respect to this class of natural productions, stand next to those with respect to the vegetable creation. The same accurate inspection was requisite in both; and, from the immense number of subjects in each, it was equally necessary in both to search out for minute diversities, whereon to found an artificial classification.

LINNÆUS was now thoroughly engaged in his academical functions. Besides botany, he lectured on natural history in general, the *materia medica*, dietetics, and the distinction of diseases; and students flocked to hear him. They came from Russia, Norway, Denmark, Great Britain, Holland, Germany, Switzerland, and even from America. He made excursions in the summer at the head of two hundred pupils, besides many foreigners and other persons of distinction: they set out in small parties to explore the country; and whenever any rare plant or natural curiosity was discovered, a signal was given with a horn or trumpet, when the whole corps joined their chief, to hear his demonstrations and remarks. They used to return with their hats adorned with flowers, and the sound of musical instruments proclaiming their approach. At that time, all the young students of divinity were obliged to learn the elements of botany and domestic medicine, in order that they might be enabled to administer to the bodily afflictions of their flocks, in remote districts, where regular medical assistance might not be attainable in a moment of emergency; and the number of LINNÆUS's pupils and admirers was greatly increased, in consequence of this wise and humane regulation.

The credit he was acquiring in his own country appeared in his election to the post of Secretary to the Academy of Sciences at Upsal. Honours, both foreign and domestic, accumulated on him; of which one of the most singular and flattering was that of having a medal struck with his effigy, at the expense of four Swedish nobles in 1746. He was nominated by the King to the rank and title of Archiater, that is, Dean of the College of Physicians, in 1747; and was the only Swede chosen into the new modelled academy of Berlin.

Many of the pupils of LINNÆUS travelled into foreign climates, in order to extend the sphere of natural knowledge. No circumstance, perhaps, in the life of this eminent person is so truly honourable to him, as his having been the founder of such a school of able and enterprising men, whose zeal for their favourite pursuits carried them through dangers and difficulties into the most remote parts of the globe, to the infinite emolument of science. The bent and history of the labours of these meritorious students would form a most interesting volume of itself: too many of them fell victims to their enthusiastic spirit of enquiry, to the climate, or to bands of savages, incapable of comprehending the wisdom and philanthropy of their designs. Still the enthusiasm of genius was not to be damped, either by the retrospect or the anticipation of evil; and the successful labours of KALMN, THUNBERG, SOLANDER, and others, whose works have greatly contributed to the diffusion of science, filled the heart of LINNÆUS with gratitude and delight: insomuch, that, when labouring under a very severe fit of the gout, brought on by his sedentary habits, the paroxysm subsided immediately from the revulsion of spirits, which he experienced at the sight of the valuable collection of plants and natural curiosities brought by his pupil KALMN from North America.

In the year 1751, or thereabouts, the Queen of Sweden, LOUISA ULRICA, sister to the great FREDERIC of Prussia, having a taste for natural history, which her royal consort, King ADOLPHUS FREDERIC, also patronized, showed much favour to LINNÆUS. He was employed in arranging her collection of insects and shells, in the country-palace of Drotningholm, or Ulricksdahl; and was frequently honoured with the company and conversation of their majesties, during his attendance there. The king caused every remarkable curiosity in the kingdom to be shown to LINNÆUS, in order that he might describe it from his own observation: a scene so interesting might have recalled to mind that of antiquity, when ALEXANDER THE GREAT ordered all the most curious animals that could be procured to pass befor ARISTOTLE, in order that he might characterize them. The queen took so much pleasure in the conversation of her distinguished naturalist, that she allowed him his habitual indulgence of smoking, even in her apartments, that he might continue his labours with more ease and satisfaction to himself.

Still LINNÆUS loved his garden better than any other place, and endeavoured, amidst its beauties, to find a solace against the sufferings which a declining state of health began to crowd upon him, whilst he might yet be considered in the prime of life. The seed of the *Lotus ornithopodioides* had been sent to him by Professor De Sauvages from Montpellier. It prospered, and bore two flowers : delighted with them, he recommended them to the strictest care of the gardener; and two days after, returning home late in the evening, he immediately went into the garden to look at them, but they were not to be found. The next night he went again : they were still invisible. The next morning they appeared as usual; but the gardener thought they were fresh ones, as there were not any to be found the evening before. Linnæus pondered over the circumstance, and went again the same evening, intent on solving the mystery: they had again vanished; but, searching more strictly for the fugitives than he had hitherto done, he at last found them closely folded up, and their leaves contracted over them. To a mind inquiring as that of Linnæus, this discovery was enough to awaken a new train of ideas: intent on surprising nature in her most secret operations, he might now be seen perambulating the garden, and the hothouses, in the dead of night, with a lantern in his hand; and, constantly finding the vegetable creation in a dormant state, their flowers concealed, and their leaves contracted round them, he formed his theory of the sleep of plants, and proved that it took place at regular intervals, like that of animals. This discovery enabled him likewise to form a vegetable timepiece, wherein the hours of the day were marked by the different periods at which certain flowers began to close their blossoms; and, in the same manner, he framed a rural calendar for the regulation of the labours of husbandry, according to the appearance of the blossom of plants, at stated intervals.

"'Twas a lovely thought to mark the hours,
As they floated in light away,
By the opening and the folding flowers,
That laugh to the summer's day.

"Thus had each moment its own rich hue
And its graceful cup or bell,
In whose coloured vase might sleep the dew,
Like a pearl in an ocean-shell.

"To such sweet signs might the time have flow'd
In a golden current on,
Ere from the garden, man's first abode,
The glorious guests were gone.

"Yet is not life, in its real flight,
Mark'd thus—even thus—on earth,
By the closing of one hope's delight,
And another's gentle birth?

"Oh! let us live, so that flower by flower,
Shutting in turn, may leave
A lingerer still for the sunset-hour,
A charm for the shaded eve."

MRS. HEMANS.

It was the happiness of LINNÆUS, that, as his pursuits were in their very nature particularly adapted to turn his thoughts to the wisdom and love of God; so was he, from the sweetness and sensibility of his disposition, peculiarly disposed to dwell with adoration and gratitude upon these attributes in the Deity. In his lectures and botanical excursions, he was frequently led into expatiating on the greatness and omnipotence of God: and, on such occasions, his heart seemed to glow with celestial fire, and torrents of the most touching eloquence streamed from his lips. Hence he was as valuable as a teacher of religion and morality, as of wisdom and philosophy. His favourite observation was—"*Theologia naturalis est vera philosophia.*"—"The works of nature best teach the being of a God." Over the door of the hall wherein he gave his lectures, he caused the following inscription to be placed: "INNOCUI VIVITE! NUMEN ADEST."—"Live guiltless! God observes you." He could never think of the wonderful paths in which he had been guided by divine Providence, without being moved with the liveliest gratitude, and thanking the Almighty for all the proofs of his grace and mercy; and he concluded the tract, which contains the occurrences of his life, and in which he gratefully enumerates all his reasons for thankfulness to God, with the words—"The Lord hath been with him whithersoever he hath walked, and hath cut off all his enemies from before him, and hath made him a name like the name of the great men that are in the earth."—1 Chron. 19, viii.

About the year 1751, he published his *Philosophia Botanica*, a comment on, or amplification of, his own *Fundamenta*, and essential to the full comprehension of his system; but the work of LINNÆUS, which HALLER terms his "*Maximum opus et æternum*," appeared in 1753. It was the *Species Plantarum*, in two volumes, octavo, containing a description of every known plant, arranged according to the sexual system. The description, however, is independent of any system, as being founded on the essential character of each species, with a further reference to the generic description given in the *Genera Plantarum*. In this publication, LINNÆUS first introduced his admirable invention of ***specific*** or ***trivial names:*** thus, the species of every genus is designated by a single epithet, expressive of some obvious character; and the tiresome plan of quoting an entire description, to distinguish the species, was abandoned.

In the mean time, honours of the literary kind had been accumulating on him from foreign countries. Besides several learned societies of inferior rank, he was elected Member of the Imperial Academy, the Royal Societies of Berlin and London, the Academy of Petersburgh; and, finally, was nominated one of the eight Foreign Members of the Academy of Sciences at Paris, being the first Swede who had obtained that distinction. The remote city of Upsal was visited by many strangers, attracted by his reputation, which extended throughout Europe. They prolonged their stay, solely with the view of becoming acquainted with him; and the number of students in its university was doubled. His correspondence included almost all the eminent cultivators of natural history; and he was continually receiving tributes from all parts, of books, plants, and specimens, which enabled him to complete his vast plan of carrying a new systematic arrangement through every department of nature. This he effected by the completion of his great work, SYSTEMA NATURÆ, which had grown in successive editions, from a few tables, to two, and finally to three, volumes; and received his finishing hand in 1768. In this performance, LINNÆUS is the methodiser and nomenclator of all the known productions in the three kingdoms of nature.

On the 27th of April, 1753, he received from the hand of his sovereign, GUSTAVUS III., the Order of the Polar Star, an honour which had never before been conferred for literary merit, nor had it ever been bestowed on any person below the rank of a nobleman. A still more remarkable, if not a more grateful, compliment was paid him not long after by the King of Spain, who invited him to settle at Madrid, with the offer of an annual pension for life of two thousand pistoles, letters of nobility, and the free exercise of his own religion. This proposal was conveyed to him in a handsome letter by the Duke of Grimaldi, then prime minister; and it was as handsomely declined by LINNÆUS, who answered, that, if he had any merit, his services were due to his own country.

LINNÆUS was fond of the portraits of great men, and had his hall hung round with those of the most celebrated botanists. He was always ready to do full justice to the merits of others, and equally candid in the admission of any errors in himself, which were pointed out solely from a disinterested regard to science; but of mere personal reflections he never took the smallest notice. The great Boërhaave had, early in his outset, advised him never to answer any attacks that might be made upon him. "I promised," said Linnæus, "to take his advice, and I have found my account in so doing." It is indeed a pity, that those to whom life itself appears too short for their enquiries, should waste a single particle of that time, which is equally valuable to the world at large as to themselves, in cavils that interest none but the disputants; and are forgotten even by them, as soon as any new subject of controversy appears.

His patriotic moderation in refusing the offer of the King of Spain received its just reward in November, 1756, when he received a diploma, which raised him to the rank of the hereditary nobility of the kingdom; and he forthwith called himself Von Linne. In 1762, he took a coat of arms, expressive of the sciences he cultivated. Thus did the descendant of peasants, he whom his own father at one time intended for a shoemaker, become, by the force of genius and perseverance, the equal of nobles, the favorite of princes, the glory of his nation, the guiding star of the world at large in all matters of natural science, associating them inseparably with his own name, for the admiration and instruction of future ages.

In 1763, LINNÆUS was permitted to avail himself of the assistance of his son, then twenty-one years of age, in the labours of the botanical professorship, and the young man was thus trained up for his future successor. His eldest daughter was married to an officer in 1764.

The latter years of LINNÆUS were spent in a state of affluence and honour, very different from the poverty and obscurity of his early life. He was one of those great men, who have shown by example how much the genius and activity of an individual are capable of accomplishing. He was the reformer of botany, and perhaps the greatest promoter of natural history that ever lived; and so much has never been done for that science, in so short a space of time, as at the period he flourished and immediately after.

In 1773, the reigning King of Sweden appointed him, in conjunction with others, to make a new translation of the Bible into the Swedish language; but the health of LINNÆUS early fell into decay from the intensity of his application and the silent and sedentary nature of his pursuits. In the month of May, 1774, whilst lecturing in the botanical garden, he was attacked by apoplexy, the debilitating effects of which obliged him to relinquish the more active parts of his professional duties, and to close his literary career. In his diary he thus describes his situation, upon entering on his sixty-eighth year: "LINNÆUS limps, can hardly walk, speaks unintelligibly, and is scarcely able to write." Yet, even in that state, nature was his consolation and delight. He used to be carried daily into his museum, and turned his dying eyes, with peculiar delight, on the varieties which had been brought him by his pupils from various parts of the globe.

In 1776, he had another apoplectic stroke, which deprived him of the use of his right side. His situation then, altogether, exhibited the most melancholy picture of the decay of the human powers. His intellectual faculties wasted away like his body. He, who, in the prime of life, had been the most systematic genius of the age in which he lived—he, of whom it had been said, "*Deus creavit, Linnæus disposuit*"—could now only utter a few confused and unconnected words. He was obliged to be carried, supported, dressed, and fed by others. At length, after suffering excruciating agonies for twelve months, his pains relaxed, and he expired in a gentle slumber, in the afternoon of the tenth of January, 1778, thus calmly closing a busy and meritorious life of seventy years, seven months, and seven days.

The death of Linnæus was regarded in Sweden as a national calamity. The whole university went into mourning; his funeral was attended by all the professors, doctors, and students, then at Upsal; and his pall was supported by eighteen doctors, who had formerly been his pupils. The King, in his speech to the States, in the same year, publicly lamented his death; and ordered a medal to be struck to his memory. In 1787, when the foundation of the new building in the botanical garden was laid, among the Swedish coins which were deposited on the first stone, a medal was likewise placed in honour of Linnæus; and in 1798, a monument was erected to his memory in the cathedral of the city of Upsal.

The same qualities, that distinguished the literary life of Linnæus, marked his moral conduct. The love of order and punctuality, so evident in his writings, might be traced also in his daily actions. He proportioned the length of his sleep to the season of the year: in summer he slept from ten at night till three in the morning, in winter from nine till six; and he regulated his studies according to the natural flow of his spirits, laying them aside as soon as he felt his attention fatigued. He never deferred doing what was necessary to be done: every thing he observed he noted down in its proper place immediately, and never trusted it to memory. His domestic concerns he confided entirely to his wife, who was not so amiable as he deserved to have found her; but his fidelity and tenderness as a husband, and his kindness as a father, were as conspicuous as was his affection for his friends, and his sincerity in all his dealings.

In stature, Linnæus was below the middle size, and strongly made, though he had contracted a habit of stooping, from his constant search after plants, when he was walking: his head was large, and somewhat elevated at the hinder part: his countenance was open and serene: his eyes were brown, and, though small, were singularly expressive, brilliant, and penetrating: his ear was acute in catching all sounds, except those of music to which he had a dislike, which might be deemed singular in one so alive to joyful expressions and social harmony. He had a lively imagination; a correct judgment, guided by the strict laws of system; a most retentive memory, but it began to fail after his sixtieth year, being overburdened with such an immense load of names. He laboured to inspire the great and opulent with a taste for natural history, and he wished particularly that such as were devoted to an ecclesiastical life should have some knowledge of it. He thought it would sweeten retirement, and that pastors had great opportunities for making discoveries. He was, as we have seen, decidedly religious himself; and not one of his greater works begins or ends, without some passage expressive of admiration for the Supreme Creator.

LINNÆUS was succeeded in his offices and dignities by his only son CHARLES, who was a worthy character, and greatly beloved by those who knew him; but he had not the ardour and enthusiasm which inspired his father. He was snatched from his career in November, 1783, in the forty-second year of his age, by a stroke of apoplexy. As he was unmarried, the male branch of the family of

LINNÆUS became extinct by his death: his coat of arms, therefore, according to the custom of Sweden, was broken to pieces, and the gardener of the university of Upsal strewed flowers over a tomb, which contains the ashes of a generation that will remain great and imperishable as long as the earth, and nature, and her science, shall exist.

After the death of the younger LINNÆUS, his museum and library reverted to his mother and sisters, as he had never been married: and the former instantly fixed her eyes on Sir JOSEPH BANKS, as the most likely person to purchase these relics at the high price, as she thought it, of a thousand guineas. On his refusal, and by his kind recommendation and advice, they came into the hands of the late Sir JAMES E. SMITH, who purchased them for one thousand and twenty-nine pounds. The sale was precipitated before the return of the King of Sweden, then on his travels, lest he should oblige the heirs to dispose of the whole at a cheaper rate to the university of Upsal. This would actually have been the case, as appears from the exertions made by his majesty on his return, who sent a courier to the Sound, and a vessel by sea, to intercept the ship that was bearing away the prize.

Sir JAMES SMITH, having gained possession of this treasure, was desirous to communicate the benefit of it, as extensively as possible, to the public. With this view, he, in the year 1788, drew the plan of an institution, to be called the Linnæan Society, intended for the promotion of discoveries and improvements in natural history. Sir JAMES SMITH was most deservedly chosen president of the society; and it obtained a royal charter in the year 1802, with a patent for armorial bearings. When it is recollected, that the purchase we have mentioned comprehended the complete museum of LINNÆUS, including the library, herbarium, insects, shells, and all other natural curiosities, with all the manuscripts, and whole correspondence of the illustrious Swede; the authority which such an acquisition gave to the labours of the infant-society, as well as to all botanical and zoological publications, the authors of which have ever been allowed freely to consult it, will readily be perceived. Nothing perhaps could have more contributed to raise up, or to improve, a taste for natural science in any country; and the TRANSACTIONS, published by the society, prove, that its members are not idle venerators of the name they bear.

When Sir JAMES SMITH died, he directed in his will that these treasures should be offered, after his own death, to the society. They were accordingly purchased by that body for three thousand guineas, and are now placed in the society's rooms in London.

SHORT ACCOUNT
OF
THE SYSTEMS
OF
LINNÆUS AND JUSSIEU.

AS it is a question much agitated among scientific writers in the present day, whether the principles of JUSSIEU or those of LINNÆUS offer the greatest advantages in pursuing the study of botany, it will not perhaps be amiss, at the conclusion of this narrative, to introduce a short explanation of those two great rival systems. The arrangement of LINNÆUS is confessedly artificial, whilst that of JUSSIEU is denominated the natural one. Many have not even heard the name of JUSSIEU, and thus his system has not been so generally studied. My design, therefore, is to arrest the attention of young botanists, and, by placing both methods before their view, to set them about enquiring;

for the subject, as it regards both, demands an impartial consideration. Every person, who professes an acquaintance with the science of botany, ought to give to each department of it a share of his attention, and judge for himself respecting the comparative merits of these two illustrious inventors.

The most celebrated names are to be found on each side in the controversy. In the defence of the artificial system, we see SMITH, WITHERING, ROSCOE, RENNIE; on the other hand, BROWN, DE CANDOLLE, MIRBEL, LINDLEY. Between such luminaries how shall inferior minds decide?

> Non nostrum est inter *tantos* componere lites.
> VIRG.

The system of LINNÆUS, being first in the order of time, claims the first mention. It is founded on the number, situation, and proportion of the essential organs of fructification, denominated stamens and pistils. The vegetable world is, by this method, divided into twenty-four classes, distinguished by their stamens: these classes are subdivided into orders, which are *generally* marked by the number of the pistils. The names of both are of Greek derivation, and allude to the functions of the respective organs. The first eleven classes are distinguished solely by the number of stamens. These are called monandria, diandria, triandria, tetrandia, pentandria, hexandria, heptandria, octandria, enneandria, decandria, dodecandria, from the Greek words, one, two, three, four, five, six, seven, eight, nine, ten, twelve. No flowers have yet been found to have precisely *eleven* stamens, which is the reason no class has been allotted to that number. The word *andria* signifies *male,* because the stamens of flowers are compared to males, and the pistils to females. Hence the orders are denominated monogynia, digynia, trigynia, tetragynia, pentagynia, hexagynia, heptagynia, octagynia, enneagynia, decagynia, dodecagynia, polygynia, according as the flower has one, two, or more pistils, from the numerals as before, and the Greek word *gynia,* which signifies female. As an example, the jasmine, being in the second class, and first order of the class, is placed among the diandria monogynia, and has two stamens, and one pistil; the lily, having six stamens and one pistil, is ranked hexandria monogynia; but the rhubarb is the only species of the enneandria trygynia, or which has nine stamens and three pistils.

The classes we have now considered differ but little in general with respect to their natural habits. In the third class we find most of the natural order of grasses: the fifth, pentandria, is the most numerous of all the classes: the sixth contains the lilies, and many other bulbous plants, and is sometimes called the liliaceous tribe.

The twelfth class, icosandria, has twenty stamens or more, inserted into or growing out of the calyx : this mode of insertion always indicates eatable and wholesome fruit. The thirteenth class, polyandria, has numerous stamens inserted into the receptacle: the plants of this class are often poisonous. The fourteenth class, didynamia, is known by two longer and two shorter stamens, and comprehends flowers similar in their structure to the fox-glove and dead-nettle. The tetradynamia, or fifteenth class, has flowers containing four long and two short stamens : these comprise the cruciform flowers, as the stock-gilliflower, radishes, cresses, turnips, and cabbages. The class, monadelphia, contains many plants similar to the mallow: they are known by the union of the stamens at their bases into a cylinder. There are eight orders in this class, of which the eighth, polyandria, is the most important, and contains mucilaginous emollient plants. The diadelphia contains papilionaceous flowers, somewhat resembling a butterfly: such are the pea, the kidney-bean, the broom, the furze, and the acacia. The polyadelphia has the filaments of its flowers united into several masses or bundles, as the hypericum, which is the principal genus.

The syngenesia has compound flowers, of which the anthers are united into a tube; as the sun-flower, daisies, and artichokes. In the class gynandria, the stamens are inserted either upon the style or germen: there are nine orders in this class, among which is the fly-orchis, a curious flower found chiefly in the chalky soils of Kent and Cambridgeshire; and the ladies' slipper, which is a very scarce British plant. The three following classes; namely, monœcia, diœcia, and polygamia, or the twenty-first, twenty-second, and twenty-third, differ from the rest in having some flowers with filaments, and some with pistils only, either on the same plant, or on different plants, or mixed with flowers of the more common construction. Most of the forest-trees belong to these classes. In the monœcia is the bread-fruit tree, which serves for clothing as well as for food, the inner rind of the bark being manufactured into a kind of cloth; and likewise the sedge, the paper-mulberry, and common arrow-head. In the diœcia are the willow, the hop, the mistletoe, the hemp, and the yew. In the polygamia class, the principal plant is the cultivated fig-tree. The last class, or cryptogamia, is so named, because the stamens and pistils of the plants are either not well ascertained, or not to be numbered with certainty. This class includes the ferns, the mosses, the liver-worts, the flags, and the fungi. Among the flags is the reindeer-lichen, upon which the numerous herds of reindeer, the only riches of the Laplanders, are entirely dependant for their winter-food. In that country it grows at least a foot high, covering the ground like snow.

The terms used to designate the classes and orders are, as before observed, of Greek origin, and to the student of that language they carry their own signification; but the merely English scholar will have no difficulty in understanding their meaning and application, when he enters upon the study with the help of some good treatise, since he will find every term minutely and satisfactorily explained.

Such is a brief outline of the celebrated artificial system of LINNÆUS, which in a short time after its discovery superseded all others, and still continues to be generally studied in every country, as the easiest mode of obtaining a knowledge of the fructification of plants; and which has been characterized by an excellent writer, as "the finest example of the utility of method in science, that the world has seen."

Linnæus was the first botanist who ventured to give his system the name of Artificial, all former, and indeed most subsequent, authors being ambitious to follow what they call the analogy of nature; yet he strenuously insisted, that there is an unerring and invariable *Natural Method,* by which creative wisdom has ordained that vegetable productions should be connected by a natural affinity, and yet be distinct from each other. "This," says he, "is the first, and will be the final aim of botany. The habitual employment of the most eminent botanists is, and must be, to labour at it. It is certain that the artificial method is but secondary to the natural one, and must yield the precedence to it, whenever this latter shall be disclosed. Long have I, like others, endeavoured to establish it: I have made some discoveries, but have hitherto been unable to complete it; and I shall continue to direct my attention to it so long as I live." The arrangement which he formed was by no means satisfactory to himself; but being convinced that such a natural system was no chimera, he strongly recommended succeeding botanists diligently to follow up the same pursuit, and labour for its discovery as *nature's own system.*

The writer who has proceeded in this path with the greatest success is BERNARD DE JUSSIEU, of whom it will be proper (as well as of his celebrated nephew) to give a short biographical sketch, previously to a description of his labours in this noble department of the science.

BERNARD DE JUSSIEU was a native of Lyons, and born in 1699. He was one of three brothers, who had all a high reputation for their skill in the science. He practised physic, and became Demonstrator of Botany at Paris, Superintendant of the Botanic Garden of Trianon, and was admitted a Member of the Academy of Sciences. He was an excellent botanist, but was prevented by his modesty from writing to any great extent. After much time and reflection devoted to the subject, he employed, in 1759, a mode of arrangement, according to which he distributed the plants in the royal gardens. Although from diffidence he did not make it known to the public in any way but in conversation, he nevertheless succeeded in laying the foundation, on which his nephew afterwards raised the most admirable superstructure. He passed his life in the privacy of a man of true science, universally esteemed for his knowledge and virtues, and died in 1777.

His nephew, the no less illustrious ANTOINE LAURENT DE JUSSIEU, is, however, the man to whom the science of natural affinities owes most. The skill and industry of his uncle just mentioned, under whose eye he was educated, and whose ideas of arrangement had been early impressed on his mind, had prepared him for entering on his task with peculiar advantages. He accordingly devoted himself to this object with the most persevering diligence, and at length succeeded so far, as to complete and publish, in 1789, his *Genera Plantarum secundum Ordines Naturales disposita*—a work, containing the invaluable result of many years' reflection, and of the most extensive and accurate acquaintance with the vegetable kingdom. "The appearance of this work constituted, it may truly be said, a new era in the botanical world. Taking this for their guide, the most learned and philosophical botanists, of the latter end of the foregoing and beginning of the present century, have devoted their time and their talents to the improvement of this method. Still it must never be forgotten that the two JUSSIEUS, BERNARD and ANTOINE, have the merit of rendering the system accessible to the student, so that the Natural Method, and the Method of JUSSIEU, are synonymous terms." The French newspapers of October, 1836, announced the death of ANTOINE JUSSIEU at the age of eighty-nine.

We will now proceed to give a concise explanation of their arrangement.

The Natural System by JUSSIEU begins by distinguishing plants into three great divisions, from the nature of their seeds, that is, whether having one cotyledon (seed-leaf), or two cotyledons, or none at all. It then divides the vegetable world into fifteen classes, distinguished by the *nature* of their corolla, or their not having one; and then by the position and insertion of the stamens, not by their number. Thus the cryptogamic plants are separated from the others, their seeds being without cotyledons. They form the first class. All other plants are distinguished into such as have seeds with one cotyledon or with two. The first of these two descriptions of seeds (that is, those with one cotyledon) affords three distinct classes, according as the stamens are inserted below the pistil, on the calyx, or on the seed-vessel, the form of the corolla not being regarded.

The plants which have two cotyledons follow, and the corolla is now to be taken into consideration: for they are divided (from distinctions which have reference to the *corolla*) into those which are apetalous, without petals; monopetalous, with a single petal; and polypetalous, with many petals. These are subdivided according to the insertion of their stamens, and the union or separation of the antheræ which they support, into ten classes; which, with the four already mentioned, make fourteen. To these are to be added the declinous plants, so called from the separation of the stamens and pistils; the stamens being upon one flower, the pistil or pistils upon another, on the same or on different plants. These make up the fifteen classes.

The classes have no particular appellations, but are distinguished by numbers, with a short definition of the essential character.

The genera are subdivided into one hundred orders, which are meant to be natural; and which take their names, as ***convolvuli***, ***rosaceæ***, ***jasmineæ***, &c., from the leading genus—that is, the genus in which the plants are most abundant, to which all the genera of these separate orders bear a certain similitude of appearance. "Thus, for instance, *rosaceæ* includes all rose-looking flowers, and such as assimilate in leading points with that tribe; viz., brambles, strawberries, cinquefoils, and similar icosandrious plants: so too with *labiatæ*, which comprises every description of lipped plants—sage, lavender, thyme, mint, &c. *Pomaceæ* is dependant upon the early formation of the fruit; and includes all apples, pears, quinces, and similar kinds; it is merely the addition of the terminating diphthong, to the leading generic name which distinguishes each order, such as *myrtaceæ*, *cruciferæ*, and *orchideæ*, that forms the guide to what are termed the *Natural Orders.*"

We may remark this difference between the artificial system of LINNÆUS, and the arrangement of JUSSIEU, that the first author gave the principal descriptive name to his twenty-four classes, the latter gave a name to his orders only.

Such then are the systems of those two eminent men: the application of each to unknown plants may be thus described. When we meet with one of this description, by the Linnæan method, we count its stamens and styles, or observe any other circumstance attending those organs, on which the characters of the classes are founded: we then, by similar means, determine the orders, and afterwards proceed to compare the parts of its flower and fruit with the characters of every genus in that order, till we find one that agrees with them. Having fixed the genus, we read over the characters of the species, till we have met with the right. The mode of using the system of JUSSIEU is, to consider what known genus or family the plant most approaches in its habit and leading characters. By turning to such, through the help of an index, we shall know how far we are correct, and we may by this means become familiar with natural orders and affinities. Having determined the genus, we must recur to the Linnæan method for the species, because JUSSIEU has not treated of species. By such a method of associating these two great authors, we render them truly serviceable to each other, and to the science; whereas, by placing them in opposition, as some have indiscreetly done, we only make stumbling blocks of all their defects, for there must be defects in all attempts of the human intellect to keep pace with the infinite wisdom and variety displayed in the works of God.

Many alterations and improvements have been introduced, from time to time, into the arrangement of the JUSSIEUS by M. DE CANDOLLE, Professor LINDLEY, and other botanists; but my concern in this outline is, only to present a short view of the original method as given to the world by the founders themselves of the Natural System.

For further information, the intelligent student must consult the works of the illustrious writers whose names I have just mentioned, and of the others at the beginning of this article. I can assure him, that no trouble he can take in the investigation is at all to be compared to the reward he will receive. The pure and solid gratification of mental exercise, and the pursuit of truth in the study of nature's laws, will confer a pleasure to which the voluptuary and the sensualist will in vain endeavour to find an equal. To the attainment of this enviable possession, I have undertaken merely to guide the way at the outset; and now commend him to more able instructors—to those, indeed, who are alone qualified to bring his journey to a prosperous and happy termination.

There is religion in a flower.
Its still small voice is as the voice of conscience:
Mountains and oceans, planets, suns, and systems,
Bear not the impress of Almighty Power

In characters more legible than those,
Which he has written on the tiniest flower,
Whose light bell bends beneath the dew-drop's weight.

HENRY G. BELL.

It remains to say a few words about the celebrated poet, GOËTHE, and his doctrine respecting the metamorphosis of organs; that is, the change of leaves into the various organs of a plant. He is one of the most extraordinary characters of the present age; and, from his great dramatic genius, has acquired the appellation of the SHAKSPEARE of Germany. The following sketch of his life and theory is compiled chiefly from various works, published by the Society for the Diffusion of Useful Knowledge—the *Essai sur la Metamorphose des Plantes*, by GOËTHE himself—and the Introduction to Botany by Professor LINDLEY, of the London University. The latter work contains a body of information rarely to be met with.

JOHANN WOLFGANG VON GOËTHE was born at Frankfort on the Maine, in the year 1749. His parents were wealthy, and he received an extensive and first-rate education. He studied at the universities of Leipzig and Strasburgh; and in 1771 took a doctor's degree in jurisprudence; but from his early youth, literature was his prevailing delight. His genius was universal, and his productions amount to fifty-five volumes of works of imagination and science. Either as an epic, lyric, or dramatic poet, he ranks among the greatest masters, whether of ancient or of modern times. Our own immortal SHAKSPEARE was his favourite author. The work by which he is most popularly known throughout Europe, is his Sorrows of Werter, a tale of romance calculated to make all who read it melancholy and dissatisfied. He was accustomed to say, that he never had a disease of the mind which he did not cure by turning it into a poem: and during the political troubles which assailed his country from the ambition of BUONAPARTE, instead of interfering with the concerns of government, he would not even look at a newspaper, but sought refuge in the cultivation of the arts from the miserable realities of life. He was much attached to the studies of natural history and various branches of science. At one time he made researches and experiments in the study of chromatics, edited a scientific journal, and gave to the world some papers on comparative anatomy, geology, mineralogy, optics, and meteorology. His botanical studies were continued for many years of his life. Antiquities and the fine arts also engaged a considerable share of his attention: on the latter subject, his prose writings are very numerous. He wrote likewise many works of criticism, remarkable for the lenity with which he treats the authors that came under his notice.

In philosophy he was perfectly acquainted with the various systems of metaphysicians, and was in some measure attached to those of FICHTE and SCHELLING; but he avoided all controversy, and endeavoured to render his speculations subservient to his pursuits in natural science and literature. By his writings he has sown the seeds of a vigourous and nervous style in Germany and other countries of Europe, which has been productive of the happiest effects; and been the means of developing talents, which, but for so bold an example, might have continued bound in the fetters of custom for a much longer period.

In person GOËTHE is said to have been extremely handsome, and largely endowed with the gifts of bodily strength. He was fond of the pleasures of society, and indulged in them without restraint. He passed his life in ease and affluence, and was upon terms of perfect equality with his superiors in rank and station. He was honoured with the confidence and friendship of the Duke of Saxe Weimar: and in early life took up his residence at his court; and was never estranged from him till the prince's death in 1827. There are many curious anecdotes current in Germany respecting the career of pleasure which they indulged in during the first few years of their manhood; but even in the midst of his gaiety and dissipation, the delights of the mind predominated over those of the body. He did not marry till he was advanced in years, remaining a bachelor till he was fifty-seven : his family was one son, who died in 1830. This was a severe blow to GOËTHE, who was then declining in strength; but he survived the calamity, and spent his last years in cheerful retirement. To the latest hour of his life, he made it his business to inform himself concerning the progress of the sciences in foreign countries. All new books were brought to him, and it is said that a volume by SALVANDY was grasped in his hand when he died. His last words were remarkably appropriate to his temper, and might be considered by his admirers as almost prophetic. He ordered the window-shutters to be opened, exclaiming, "More light! More light!" He retained possession of his faculties to the very end, and directed that his extensive collections in art and natural history should be preserved as a museum for twenty years. His death took place in March, 1832, in the eighty-third year of his age.

We will now endeavour to explain the peculiar subject for which GOËTHE's name has been introduced.

Previously to the time of this venerable man, botanists had become tolerably well acquainted with the various organs of which plants consist. They understood in a great measure the distinctions between the leaf, the calyx, the corolla, the stamens, the pistil; and many fancied there was nothing left to be ascertained respecting them: but so long ago as the time of THEOPHRASTUS, who succeeded to the chair of ARISTOTLE, before Christ 324, a notion had existed, that certain forms of leaves were mere modifications of others that appeared very different, as the *angular* leaves in croton (tallow-tree) of the *round* cotyledons or seminal leaves of that plant. LINNÆUS himself, in 1760, wrote a thesis called, ***Prolepsis Plantarum,*** that is, the Anticipation of Plants, in which he sustained the opinion, that all the parts of a flower are modifications of leaves, ***whose period of developement is anticipated.*** Thus, with respect to what botanists term the bracteæ or floral leaves, which differ in form and colour from the other leaves of a plant, and are seated at the base of the flower, he says, in the paper abovementioned, " The bulbs of hyacinths and ornithogalums afford good evidence of their nature. Both bulbs and buds are winter coverings of plants, with this difference, that bulbs are the bases of leaves of the previous year, while buds are the rudiments of leaves of a coming year. Wherever bulbs grow, there are formed the persistent bases of leaves, within which young leaves are to be developed: within these latter leaves repose the buds or rudiments of future plants, exactly the same as the buds of trees. These buds consist of the rudiments of leaves of the succeeding year; small indeed, but containing in their axillæ other rudiments of a like nature. Now if it happen that such a plant flowers, the bud, which would otherwise have produced leaves the year after, is converted into a scape a year earlier: whence it comes to pass, that the rudimentary leaves lying in the bud lose a part of their nutriment, in consequence of the sap being drawn off to the fructification; from which cause those leaves continue small, assume a different structure, easily wither, and are called by botanists bracteæ. Thus bracteæ are nothing but leaves, which would have been developed another year, if the plant had not flowered."

Again, as to the petals, he says, "It is often very difficult to distinguish them from the calyx. The white corolla of *helleborus niger*, after flowering, assumes the green appearance of the calyx. In luxuriant flowers of *rosa* and *geum*, the corolla sometimes becomes wholly green, and assumes the foliaceous nature of the calyx. As the calyx is nothing but leaves, and as each leaf contains in its axilla the rudiment of a plant, consisting of the rudiments of leaves of a future year, it follows that the petals are of necessity the rudiment immediately within the calycine leaves: the petals, therefore, would have been leaves another year, if flowers had not been produced."

In the same manner he mentions other organs, the calyx, the stamens, and pistil, as being reducible to leaves; but the theory is evidently fanciful. GOËTHE, however, aware of the *Prolepsis Plantarum* of LINNÆUS, took up the doctrine more philosophically in a pamphlet, called the Metamorphosis of Plants, published in 1790, one year after the appearance of JUSSIEU's *Genera Plantarum.* In this he demonstrated, that all those organs to which so many different names were applied, and which, in fact, have so many dissimilar functions to perform, were all modifications of one common type—the leaf; that the bractea is a contracted leaf, the calyx a combination of several, the corolla a union of several more in a coloured state, the stamens contracted and coloured leaves, and the pistil another arrangement of leaves, rolled up and combined according to certain invariable laws.

Professor Lindley, after having entered into an elaborate proof of the above positions, says—"Thus we see, that there is not only a continuous uninterrupted passage from the leaves to the bracteæ, from bracteæ to calyx, from calyx to corolla, from corolla to stamens, and from stamens to pistillum, from which circumstance alone the origin of all these organs might have been referred to the leaves; but that there is also a *continual tendency* on the part of *every one of them to revert to the form of leaf.*"

The above is a short view of what is termed regular metamorphosis, that is to say, of that which is connected with the structure of all vegetables; but there is also another kind, called irregular metamorphosis, or, that which influences particular plants or parts of plants, and which occurs only in occasional instances. Of this latter, as well as of the former, many beautiful illustrations will be found in the valuable Introduction to Botany of Professor Lindley; and I cannot do my reader a greater kindness, than by recommending him to procure that interesting work.

MR. CARR

Th ... announce, that he is preparing for publication a
Work, to be entitled,

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to be considered the basis of all scien
ledge of vegetable structure.”

There is no longer any great discovery to announce, as having produced a sudden and universal change in the science: its general principles are apparently well understood; and all that botanists of the present century have been able to do, has been to work out those principles in detail, to substantiate or modify them by isolated observations, to combine into one consistent whole the multitude of species whose attributes are as numerous as themselves, and gradually to reduce into lucid order the seemingly discordant materials which constitute the vegetable kingdom.

Thus, then, by placing before the student the principal features of the botanical systems given to the world by those three illustrious characters, LINNÆUS, JUSSIEU, and GOËTHE, I have endeavoured to bring down the history of the science to the present time. I know no better mode of making the principles of *any* science acceptable, than by tracing its gradual developement in the interesting lives of its eminent promoters. Often, when meditating on the exalted labours of such men, do I think, with how far greater propriety the ode of HORACE, beginning with, "*Exegi monumentum ære perennius*," is applicable to each of them than to the polished bard himself. The passages more particularly striking have been thus translated:

I have raised a monument, which will surpass
The age of those that stand in solid brass;
That, eminently towering to the skies,
In height the royal pyramids outvies.
The force of boist'rous winds and mould'ring rain,
Years after years an everlasting train,
Shall ne'er destroy the glory of my name:
Still will I shine renown'd, and live in fame.

If the subjects advanced in this little book serve to sharpen the appetite for a greater quantity of this intellectual food, I shall reap a rich reward in having brought them before the notice of the student, nor will the latter have cause to repent the attention he may bestow upon them. The pleasure he will receive in the further prosecution of the study, if I may judge from my own experience, will be exquisite. The wonders of creating power, unfolded to his view in the minute investigation of its mysteries, will astonish and enrapture him—they will refine and humanize, dignify and exalt, every affection of his soul. I have sometimes seen young people a prey to indolence, languor, and bad spirits, chiefly for want of some fixed and rational pursuit. Only let them, when so oppressed, engage in the study of vegetable physiology, and I will venture to assert, that it will prove an effectual remedy for all their complaints. From being morose, impatient, and dissatisfied, they will become cheerful, animated, and happy ; and may perhaps, by attaining to an intimate knowledge of such subjects, be rendered instrumental to the increase of human convenience and felicity.

FINIS.

MR. CARR

Has the pleasure to announce, that he is preparing for publication a Work, to be entitled,

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